

AMERICAN ARTISAN and Hardware Record

Vol. 82. No. 11.

620 SOUTH MICHIGAN AVENUE, CHICAGO, SEPTEMBER 10, 1921.

\$2.00 Per Year.

Why Dieckmann Elbows and Shoes are better

WE make elbows and shoes exclusively—our large plant is turning out nothing but first quality conductor elbows and shoes—the result of over 40 years experience in specializing in these products.

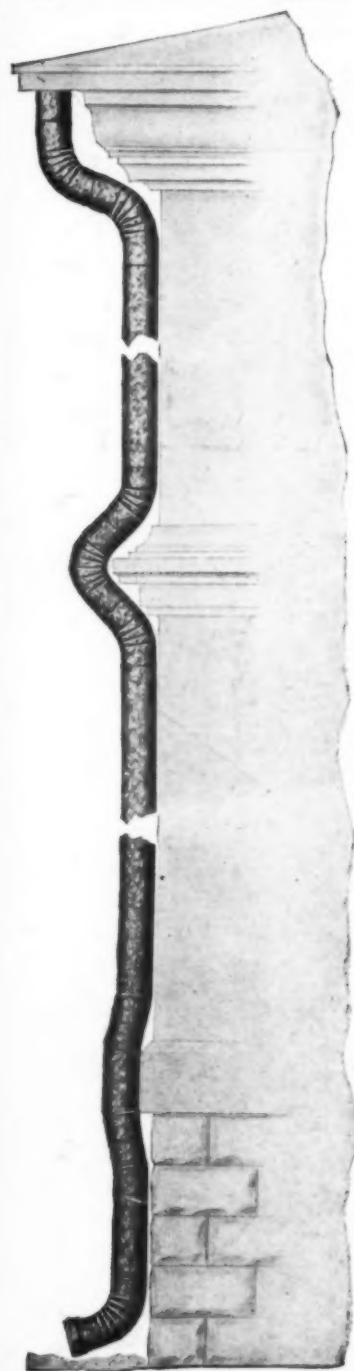
Dieckmann elbows and shoes are made of one piece of metal and have no seams. Crimps are on the body of elbow leaving the back and inside perfectly smooth. They fit without clipping or soldering. You can get them in several kinds of quality metals and in all desirable shapes, styles and angles. For your next job use Dieckmann's. Every Dieckmann elbow and shoe has our Trade Mark stamped in the back—look for it.

Write your jobber—he can supply you and tell you all about them. Our catalog on request.

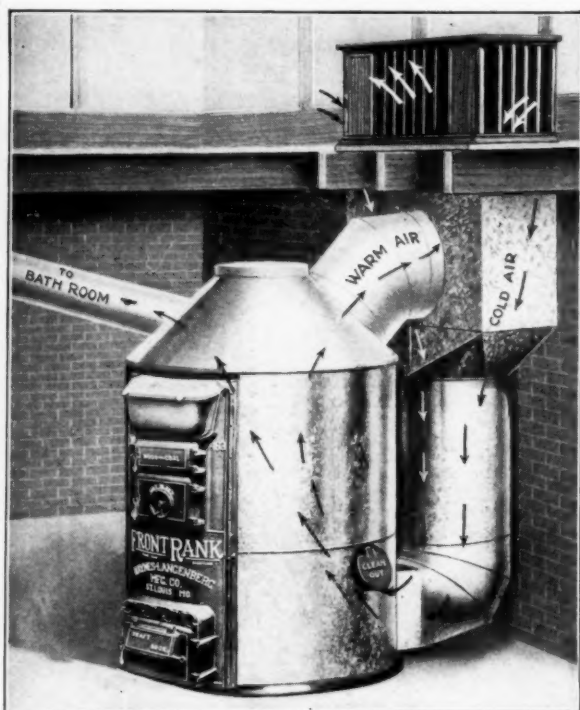
The Ferdinand Dieckmann Co.
P. O. Station B Cincinnati, Ohio

DIECKMANN

F. Dieckmann



This illustration shows elbows of all angles from 10 to 90°. Notice how each cluster of Dieckmann elbows hugs the wall.



A FRONTRANK

TRADE NAME REGISTERED

COMBINATION OF BEAUTY AND UTILITY

Furnacemen will find this combination simple and easy to sell and install, as well as a most efficient heater, very pleasing to the owner.

WRITE TODAY

If desired, we will gladly plan every installation for you.

HAYNES-LANGENBERG MFG. CO.
4058 FOREST PARK BOULEVARD
ST. LOUIS, MO.

The Best Hand in the Deck



Dealers holding a Mahoning hand take no chances. They are sure to win because **they know they are right.**

Mahoning Furnace

The Mahoning is gaining hundreds of new dealer friends this year. Dealers are expecting more in a furnace agency. **Mahoning gives more!**

Write today and we will send you complete agency terms together with the literature shown above.

THE MAHONING FOUNDRY COMPANY
622 Poland Avenue, YOUNGSTOWN, OHIO

FOUNDED 1880
BY
DANIEL STERN
Thoroughly Covers
The Hardware, Stove,
Sheet Metal, and Warm
Air Heating and Venti-
lating Interests

AMERICAN ARTISAN and Hardware Record

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SEND US ONE-TWELFTH DOZEN OF SAWS

Wholesalers and manufacturers are always glad to have orders come in by mail direct from their customers, because frequent mail orders indicate that the retailer in question is keeping his stock moving.

But the habit into which many hardwaremen appear to have fallen during the past year—of sending in orders for one saw, one plane, one hammer, one keg of ten-penny nails, etc., is without question a bad one, because it indicates that they are not carrying stock sufficient to properly care for the wants of their customers.

H. Walton Heegstra, who is known among manufacturers and wholesalers as an authority on progressive distribution methods, recently made a short talk before the Advertising Men's Post of the American Legion in Chicago, in which he made the positive statement that much of the blame for the recent dullness and non-employment is due to the fact that neither retailers nor wholesalers are keeping their stocks up to anywhere near the point where they are really in position to render proper service to the people in their trading territory.

A stove manufacturer whose product is distributed largely through the department and installment furniture stores in cities like Louisville, Cleveland, Saint Louis and Minneapolis, during a recent conversation with the writer, said that he had been able to keep his foundry working at full force since last February, while another stove manufacturer who sells principally through hardware stores, complained that most of his orders were for one or two and that they usually bore the notation, "please hurry shipment."

In other words, the dealers who bought from the first manufacturer had vision

enough to see business coming to them if they went after it—and they prepared for that business by placing reasonably sized orders in advance—

While the customers of the other manufacturer, whose trade mark, by the way, is known favorably from coast to coast, laid down on their job, waited for customers to come to their stores without urging—and then ordered a new stove to take the place of the last one they had on the floor.

Such a condition is unhealthy. Even though it may prevent overstocking, it is bound to result in loss of sales and profits to the dealer who pursues such a policy.

And worse still—it results in keeping the manufacturer from operating his plant on something like full time, thus making his fixed overhead charge altogether out of proportion to his output. It causes prolongation of the period of non-employment and prevents large numbers of men from working at their regular trade, thereby reducing their purchasing power.

It is all very well to play safe and figure that when you really need the goods you can get them quickly, but factories can not be operated for long periods without a considerable number of advance orders—and the general condition in the hardware market today is one to consider very seriously.

The one who is bound to suffer when business begins to open up—as it is beginning to do right now—is the retailer and wholesaler who has been playing safe by refusing to replenish his stock and neglecting to place advance orders.

Now is the time to go through your stock—if you have not already done so—and place orders for fair amounts in all lines.

Random Notes and Sketches

By Sidney Arnold

The intelligence of dogs is not as well appreciated as it ought to be, declares F. M. Farber of Marshalltown Manufacturing Company, Marshalltown, Iowa.

"My friend Hendridge had a most intelligent retriever," said Mr. Farber.

"One night Hendridge's house caught fire. All was instant confusion. Old Hendridge and his wife ran for the children and bundled out with them in quick order. Alas, one of them had been left behind.

"But up jumped the dog, rushed into the house, and soon reappeared with the missing child. Every one was saved. But Pongo dashed through the flames again. What did the dog want? No one knew. Presently the noble animal reappeared, scorched and burned, with—what do you think?"

"Give it up!" cried the eager listeners.

"With the fire insurance policy wrapped in a damp towel!"

* * *

Punctuality is one of the cardinal virtues of business in the belief of W. A. Denny of New Hampton, Missouri, former president Missouri Retail Hardware Association. He illustrates the point with a negative example, as follows:

In the old days of Mississippi River travel, the *Steven J. Hill* gained note as the worst boat on the river. One afternoon a fog settled and the captain gave orders to tie up for the rest of the day.

"It's too bad we're going to be late, captain," said a passenger.

"We ain't," retorted the skipper calmly.

"But I thought you were going to tie up here for hours."

"So we are, but that ain't going to make us late. We don't run so close to time as all that."

* * *

An uncommonly self-conceited chap was discoursing on his shrewdness in judging men's characters to B. Christensen, Assistant Secretary Wisconsin Retail Hardware Association, Stevens Point, Wisconsin.

Brother Christensen listened to the limit of his patience and then said:

"I think you are a poor judge of human nature."

"Why?" queried the conceited chap in tones of shocked surprise.

"Because you have such a good opinion of yourself," came the unexpected answer.

* * *

In the matter of buying hardware for replacement and increased business, some dealers want to be absolutely certain of the future, says Albert Zettler, Columbus, Ohio, ex-president Ohio Hardware Association. They remind him of this story:

Two miners boasted of the speed of their respective dogs and, in order to test the matter, a match to race them was arranged.

The bet was ten dollars, but on the day of the contest one of the miners went to the other and asked if the race could be called off, agreeing to pay two dollars forfeit.

The other readily agreed and the race was abandoned, much to the indignation of the supporters of the man who had backed out.

"Didn't you know the other dog had gone lame?" cried one of them.

"Yes, I did," replied the miner, "but he'd have won, all the same. My dog died last night!"

* * *

The Eighteenth Amendment has not yet dried all the humor out of the situation, says Irving S. Kemp of Vaughan & Bushnell Manufacturing Company, Chicago, Illinois. Here is one proof which he submits:

Speaking of white mule, two rustic sports were uncertainly flivvering their way home from the county seat.

"Bill," said Henry. "I wancha to be very careful. Firs' thing y' know you'll have us in a ditch."

"Me?" said Bill in astonishment. "Why, I thought you was drivin'."

* * *

Bargain prices are usually misleading, in the opinion of George Harms of F. Meyer & Brother Company, Peoria, Illinois. He tells this story by way of example:

Little Jane had long desired a baby sister, and one day she came rushing home in high excitement.

"Oh, mother; come downtown quickly!" she exclaimed. "There are splendid bargains in babies and you can get one while they are cheap."

"What in the world are you talking about, my dear?" the mother asked in astonishment. "Somebody must have been playing a joke on you."

"Truly, truly!" the little girl declared, jumping up and down in her eagerness. "Great big sign about it, on the top of the skating rink. It says, 'This week only, children half price.'"

* * *

It doesn't pay to be too positive in your assertions, says Wilbert G. Wise of the Wise Furnace Company, Akron, Ohio. You may run against a snag as the conjuror did.

The conjuror was producing eggs from a top hat. He addressed a boy in the front row:

"Your mother can't get eggs without hens, now can she?" he asked.

"Oh, yes," said the boy.

"How's that?" asked the conjuror.

"She keeps ducks," answered the boy.

* * *

The Wage-Earner.

Here is a song to the salaried man,
Who hustles each day of the year,
His family lives on a most modest plan,
They've nothing expensive or dear.
No Wall Street affairs does he worry about,
He hasn't a million at stake;
And he don't have to wonder how much he is out,
Or gloat over what he may make.

The market on copper may rise or may fall,
He's not interested a bit;
Conditions of cotton don't fret him at all,
Nor a drop in wheat give him a fit.
Each Saturday night he is given his pay,
Enough and a little to save;
And he isn't alarmed lest a stock-slump some day
Send him down to a suicide's grave.

—E. A. Brininstool!

Any Time Is a Good Time for the Selling of Shears, Scissors and All Other Kinds of Cutlery.

No Housewife Has Ever Too Many Knives for Her Kitchen, Nor Scissors and Shears for Her Sewing Room.

An old department store man told me a good many years ago that when he was "stumped" for something to draw trade with, there were always three things that he could fall back on:

Towels—Handkerchiefs—Cutlery.

And I know that he is right—both from my own experience and from what I have seen in stores all over the country.

Incidentally—stick this in your memory box: *Modern department stores do not make their money by selling stuff at cost.*

But they are quite willing to select a few items on which they take little or no profit, in order to draw the crowd.

Because they know that that same crowd will buy lots of other items on which the regular, liberal profit is made—and

On the transaction, as a whole, they make a good profit, besides turning their stock quickly.

But to get back to the cutlery proposition: No woman ever had too many knives for her kitchen, nor too many shears or scissors for her sewing room.

And most men have a failing for pocket knives and other cutting utensils, such as nippers, cutting pliers, snips, razors, etc.

So you are always sure of "having an audience," when you plan for a cutlery sale.

Take, for example, the matter of shears and scissors.

To begin with, the good housewife should own all of these:

A fairly heavy cloth cutting shears; a pair of trimming scissors; embroidery, button hole and manicure scissors; a pair of fairly heavy shears and poultry shears for the kitchen.

For the man—without any regard to his trade—there are pocket scissors; desk shears; pruning shears; snips for the auto kit.

For the tradesmen—tanners' snips in regular, circular, combination and reverse designs; tailors' heavy shears and button hole cutters; barbers' shears; electricians' scissors; paper hangers' shears.

Then in the matter of knives.

For the housewife—paring, carving, butcher knives of various sizes and shapes; spatulas; butchers' steels; pocket knives; meat choppers; meat cleavers.

For the man—sport knives of all sorts; pocket knives; straight razors and safety razors; razor strops and stropping devices.

For the tradesman—butcher knives; putty knives; blacksmith knives.

Quite a variety—and if you go about it right a large percentage of all of these folks can be induced to buy one or more during your special sale or demonstration.

I have never been able to see why the retail hardware dealer should not sell the great majority of good

scissors, shears, knives and other cutlery in his town—rather than the drug store, dry goods or department store—and if you go about it with proper aggressiveness and with a well planned campaign, you can get the procession started your way.

But in order to do that—you must put special stress on your cutlery line and prove to your

people that you really can and do render them superior service in this line, in the matter of variety of styles, quality of the product and real value for the price.

In other words—to start off right, you must have a real stock of cutlery, and you must display it properly, both in your store room and in your show windows.

In the second place, you must let people know that you have a good line of cutlery—good in quality, assortment and price.

In the third place—when a customer comes in *somebody* in your store must be able to wait upon that customer in an intelligent manner.

This means not merely that the *somebody* knows where the stock is and what there is in it, in the way of styles and grades, but that he can explain the real difference between a twenty-five cent shears and one that you sell for a dollar and fifteen cents.

To say that it is made of "better" steel isn't enough.

Barbers—Butchers—Housewives

For These Fortunate Few We Have Some Real Saving Opportunities

HAIR CLIPPERS

No. 1 nickel-plated handles, 1/8-inch cut; regular price \$2.00. For Thursday and Friday only **\$1.59**

No. 00 nickel-plated handles, 1-32-inch cut; regular price \$3.00. For Thursday and Friday only **\$2.39**



Butcher Knives

Genuine Nichols Bros. butcher knives, made of double shear steel, hand forged and hammered. Sharpened for immediate use. Warranted to satisfy. Special prices for Thursday and Friday only.

Size	R.P.	S.P.	Size	R.P.	S.P.
6-inch.....	55c	46c	9-inch.....	90c	69c
7-inch.....	65c	53c	10-inch.....	\$1.30	95c
8-inch.....	75c	58c	12-inch.....	\$2.00	\$1.69

Wiss Shears

These shears combine best material, highest skilled labor and most careful inspection. Every pair fully warranted. If imperfect from any cause, a new pair will be furnished without charge.

FOR THURSDAY AND FRIDAY ONLY

6-inch over all, reg. price \$1.30, special price 96c
8 1/2-inch over all, reg. price \$1.45, special price \$1.08
10-inch over all, reg. price \$1.65, special price \$1.25
12-inch over all, reg. price \$1.75, special price \$1.38

VONNEGUT HARDWARE COMPANY

120-124 East Washington Street.

Newspaper Advertisement of Vonnegut Hardware Company, Indianapolis, Indiana, Announcing Special Sale of Cutlery.

What is the difference in the service they will give to the customer?

"The twenty-five cent grade is made of cast steel or cast iron," the good salesman will say, "and if it should happen to be dropped on the floor, it will most likely break into several pieces. And besides, there is nothing in the blade to hold the edge, so that even if it is sharp now, it will not be very long before you will have to push your way through the goods.

"But here is a pair of shears made of high-grade crucible steel on which an extra fine piece of cutting steel has been forged on the blade. The only way you can break this blade is by sticking the point into a hole and putting considerable weight on the handle using it to pry with, or something else that you would not be likely to do, anyway.

"And these shears will stay sharp for almost an indefinite time. You can cut heavy wool cloth with

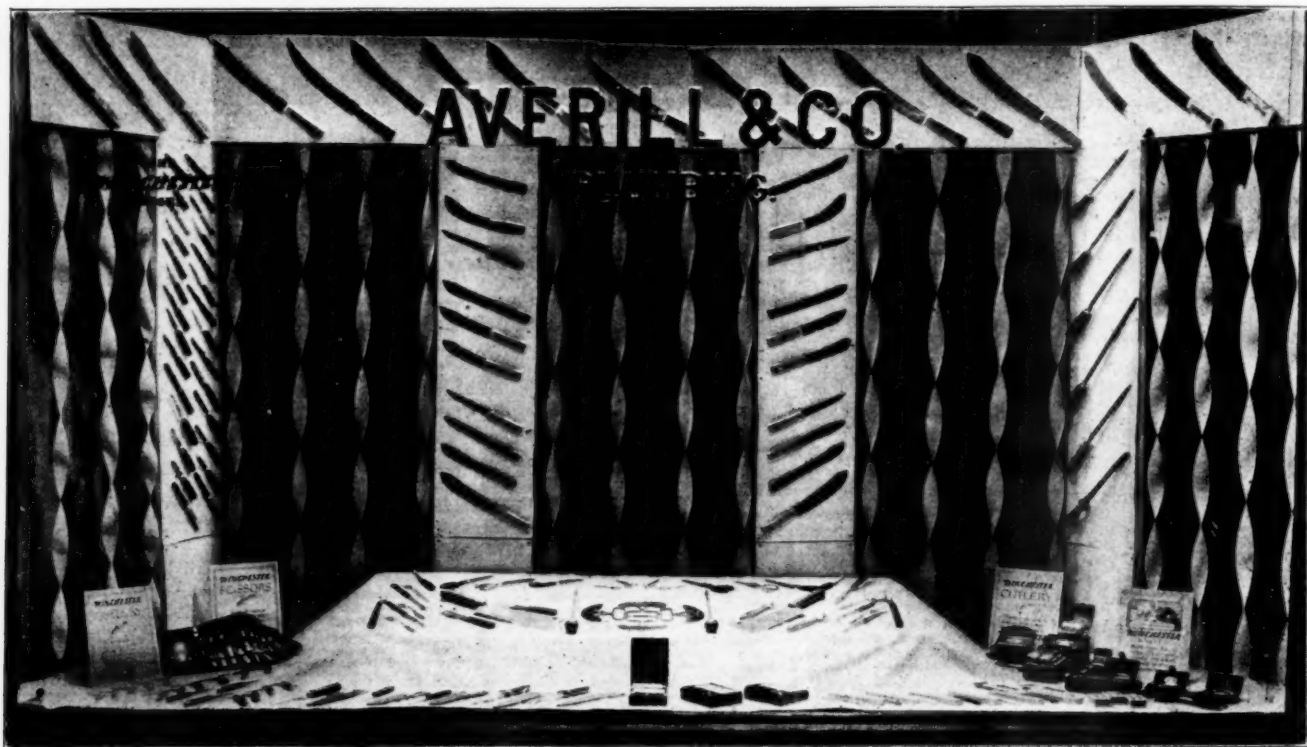
points about such articles and of putting their sales argument in just the right kind of words. But, of course, she must be properly trained.

In the illustration on the first page is shown a newspaper advertisement of the Vonnegut Hardware Company, one of the really good hardware stores in Indianapolis, and incidentally a good example of the sort of hardware store that does not allow department or drug stores to "get away" with the cutlery business of the city.

In Figure 2 is shown a good window display of cutlery of all sorts.

It was arranged by Mario G. Bianchi for C. W. Averill & Company, Barre, Vermont, one of the many progressive subscribers to *AMERICAN ARTISAN AND HARDWARE RECORD*.

The window used for this display was eleven feet long, three deep, and the glass, six feet high. For the



Attractive Window Display of Cutlery, Arranged by Mario G. Bianchi for C. W. Averill & Company, Barre, Vermont.

them and the thinnest piece of silk equally well, and there will not be any 'saw teeth' on the material, the cut being perfectly smooth.

"Did you ever see a clerk in a dry goods department cut a piece of heavy but loosely woven wool cloth? If that clerk had a good pair of scissors he would place them, with the blades at an angle of about 45 degrees, against the selvage and then, after just one 'clip,' simply let the blades cut through the entire width, using hardly any pressure at all. You could not do that with one of the twenty-five cent kind."

When it comes to knives or razors, the same rule holds good. The salesman must *know* why one cannot get the same service out of a fifty cent pocket knife or a dollar razor as is possible with a two dollar knife or a five dollar razor.

I have often thought that a bright girl would do better behind the cutlery case than almost any man, no matter how well posted he might be, for women have a certain faculty for getting at the real, practical

background, there were four upright panels one foot wide, and a space between each of two feet and four inches. The top panel was a foot wide, reaching from one end of the window to the other. Red and white crepe paper was used between the panels, being cut into two inch strips and each twisted five times. The background measured six feet high and nine feet long, and the two tapering ends three feet.

On these panels were displayed kitchen, paring and butcher knives and steels.

In the center, the floor was raised about eight inches, this platform measuring four feet by two feet. The floor was covered with white crepe paper. On the platform shears, cleavers and other cutlery were arranged in pleasing manner.

As you face the window, the right end was devoted to razors and the left to hunting and pocket knives.

Our guarantee covers your dollars.

Points Out Fire Hazards of Unsafe Cleaning Fluids.

In view of the fact that many hardware stores sell home cleaning fluids, it is well to call attention to reports which have been received by the National Board of Fire Underwriters indicating that a dangerous condition is developing from the wide sale of inflammable cleaning liquids for home use.

It is said that many drug stores are putting up solutions of carbon bisulphide which they offer to the public as safe preparations for the removal of spots and stains from clothing and other materials, although this chemical is more explosive than gasoline because of its greater volatility.

Its vapor will ignite at comparatively low temperatures without either spark or flame being present. The heat of a steam pipe, for example, is sufficient.

Carbon bi-sulphide is classified, in fact, as the most hazardous of inflammable liquids. It is thus apparent that its promiscuous sale for home cleaning purposes introduces a potential hazard that is likely to result in loss of life, particularly among women and children.

In some instances the carbon bi-sulphide has been combined with ether which makes it still more deadly.

The fire hazards of cleaning fluids differ considerably and certain of those upon the markets have been approved by the Underwriters' Laboratories as being non-combustible and non-inflammable, and others as being burnable but not giving off dangerous, highly inflammable vapors.

Cleaning preparations consisting wholly of carbon tetrachloride are safe from a fire standpoint. In fact this liquid is valuable as an extinguisher of small fires in confined places.

It would seem advisable in the circumstances that have been related, for state fire marshals and fire chiefs to issue local warnings in regard to the purchase of unsafe cleaning fluids, including gasoline.

The use of gasoline in home cleaning is sufficiently general and serious in itself without further jeopardizing public safety by the sale of more dangerous liquids masquerading as harmless preparations.

When there is any doubt about the safety of cleaning fluids now on the market enquiry should be made of the fire chief or a local agent as to whether it has been examined by the Underwriters' Laboratories.

The best protection for the public seems to lie in education, and the enforcement of restrictive regulations.

Unscrupulous druggists who sell inflammable liquids with an expressed or understood guarantee as to their safety, should be called to account. It is probable that in many cities they are breaking local ordinances governing inflammable liquids by placing such chemicals as carbon bi-sulphide and ether upon sale without precautionary marking, and are thus open to legal prosecution.

The efficiency of gasoline as a solvent has made its use in home cleaning an every day occurrence, which unfortunately is often attended by injury and loss of life.

It takes but a nominal quantity to make the atmosphere of a small room inflammable.

There was a case of Western woman for example, who poured out a half-cupful of gasoline at her kitchen sink and started to clean a pair of gloves. There was a lighted gas stove a few feet away and the gasoline vapor flashed across to it. Twenty minutes after she started her cleaning the woman was dead from the burns she received.

It is to be regretted that a woman's magazine of National circulation and the women's page of a weekly recently devoted space to suggestions for cleaning with gasoline, in the interest of economy.

The housewife was informed in the latter paper that the cellar was one of the desirable places to carry on the cleaning, the authoress evidently having no conception of the hazard she was creating or of the number of lives that might be lost through following her directions.

Gasoline vapor being heavier than air, however, would accumulate close to the floor and probably flash back to the cleaner from the furnace fire or from some other means of ignition.

The vapor from one gallon of gasoline, when properly mixed with air has an explosive power equivalent to that of eighty-three pounds of dynamite.

Gasoline vapor has been known to flash a distance of over 100 feet.

In addition, the cellar is one of the most dangerous parts of a house in which to have a fire originate because of the natural tendency of heat and flame to rise.

Open stairways, dumbwaiter and elevator shafts and other unprotected vertical openings furnish ideal flues for the rapid spread of the flames.

Meeting of Hardwaremen Will Be Held at Hillsdale, Michigan, October 17.

There will be a district hardware convention in Hillsdale on Monday, October 17, and it is expected that there will be about 50 hardware dealers in attendance.

The state has been divided into 33 districts, by the Michigan State Hardware Dealer's Association, and conventions will be held in each district. The district meetings for southern Michigan will be held in Jackson, Three Rivers, Battle Creek and Hillsdale.

Henry Katzenmeyer has been appointed by the State Secretary, Arthur J. Scott, as chairman for the district.

Men of prominence in hardware circles will speak at the different meetings. The Hillsdale meeting will be held at the Pinkham & Wright auditorium, with an evening program and dinner.

Wells & Stump Hardware Company to Open Fine Store in Oskaloosa.

Wells & Stump who have been conducting a plumbing and heating business for many years in Oskaloosa, Iowa, will open a fine hardware store at 109 High Avenue West, in that city, with a complete stock of tools, household utensils, stoves, warm air furnaces and kindred lines. A well equipped sheet metal shop will be conducted in connection. The opening will be in the latter part of September.

Predicts a General Advance in Prices.

Jesse L. Livermore, whose extensive operations have been the feature of the stock market for the past two years, believes that the protracted period of deflation is at an end. Mr. Livermore's opinions are the more interesting from the fact that he has been recognized as the leader of the bear faction and is regarded as a keen student of economic conditions.

"It is time," said Mr. Livermore, "the American business man realizes that the downward trend has been checked and that the industries of the country in general have seen the end of the readjustment period."

"During the period of inflation large numbers of business men found it necessary to expand their business in order to take care of the tremendous quantity of work coming their way, with the result that when the period of deflation had started they found themselves with large quantities of high-priced raw materials and finished products on hand which became practically unsaleable at anything like their cost."

"About that time a great cry went out from the American public against the excessive prices of everything and the inevitable happened—a buyers' strike occurred. In order that this large accumulation of stock on hand might be disposed of, it was continually offered at lower prices—from time to time, and gradually at the different levels, these goods have been liquidated. At the present time, instead of having accumulated lines of goods on hand, there is actually a shortage in many channels."

"In order partly to bring about this state of liquidation, the producers of many raw materials voluntarily cut down their output—mills were closed completely or running on very short time."

"But during this period the excessive production was gradually being used up, and once the American public realizes that prosperity is again ahead of them and that the Administration has been doing things along a constructive line and will continue doing so, there will be a scramble by every one to purchase what they need at the present prevailing low prices."

"Once that buying starts, with the production at subnormal levels, it is bound to turn the whole tide, and prices will advance again—and advancing prices always bring prosperity throughout the country."

"In order to supply the needs of 110,000,000 people of our own country and to supply the rest of the world with raw materials that they must have it will tax the energy of the producers and manufacturers of the country."

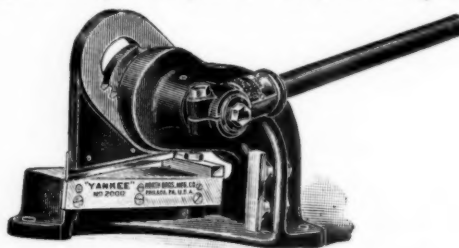
"With the Administration back of the American public, bringing about constructive legislation such as enacting a scientific tax measure, giving assistance to the railroads and helping legitimate export business, there can only be one result, and that is: very speedily to bring about a general and rapid resumption of activity in all lines of business. The farsighted business man will take advantage of this coming improvement and not wait until it is apparent to everyone."

Service first—Price later.

New "Yankee" Tools Are Designed to Meet Persistent Demand.

Hardware dealers who do a good business in automobile accessories and supplies will welcome the new "Yankee" Cutter Number 2000, for Brake Lining and Belting, just placed on the market by North Brothers Manufacturing Company, Philadelphia, Pennsylvania.

This tool, shown in the accompanying illustration, is designed to give a quick, clean, and easy cutting of



New "Yankee" Cutter Number 2000 for Brake Lining and Belting.

brake lining and belting of all kinds up to 6 inches wide and $\frac{3}{8}$ inch thick.

Power is secured through rack and pinion movement operated by lever. Adjustment in case of wear or regrinding is provided for on the lower knife by three screws and set screws.

Another addition to the North Brothers Manufacturing Company's line is the "Yankee" Drill Chuck illustrated herewith.



New "Yankee" Drill Chuck.

It is made with bit brace shank and is produced in three sizes, namely, numbers 1593 BB, 1594 BB, and 1595 BB, to hold drills from 0 to $\frac{1}{4}$ inch, from 0 to $\frac{3}{8}$ inch, and from 0 to $\frac{1}{2}$ inches.

The new "Yankee" Drill Chuck is also made with a straight shank, $\frac{1}{2}$ inch diameter, to fit breast drills and other tools. It is a

New "Yankee" Chuck Drill With Straight Shank.

great convenience for mechanics. Hence, the hardware dealer who brings this tool to the attention of his customers will encounter little or no difficulty in closing sales for both styles of "Yankee" Drill Chucks.

Full particulars of these additions to the "Yankee" line may be obtained by writing to North Brothers Manufacturing Company, Philadelphia, Pennsylvania.

Bemidji Hardware Company Will Have Largest Store in Section of State.

The Bemidji Hardware Company, Bemidji, Minnesota, has started construction of its new home which will be two stories high, with full display window frontage on two streets. The building when completed will give the Company the largest floor space devoted to hardware in its section of the state.

Good Ideas for Window Display

*Practical Lessons from Exhibits in AMERICAN ARTISAN
AND HARDWARE RECORD Window Display Competition.
How to Get More Passers-By to Come into Your Store.*

WINDOW DISPLAY OF WASHING MACHINES PROMOTES SALES.

Almost all European observers who write their impressions of the American people are unanimous in declaring that the men of America show more kindness and consideration to their women-folk than those of any other nation.

Some of the people who write books about us say that the men of America spoil their women by making life too easy for them.

Many of these Europeans are accustomed to seeing

Hence, there is an immense area of quick response in which the appeal of such a window display as that shown in the accompanying illustration has room to move and work.

This washing machine window exhibit was designed and arranged by E. Reardon for W. J. Pettie and Company, Oklahoma City, Oklahoma.

It teaches a lesson and quickens sales at the same time by the strength of its contrasting suggestions.

As explained in the description accompanying the photograph, "the background was of a purple material. The foliage was a grape spray in gold color.



Window Display of Washing Machines, Designed and Arranged by E. Reardon for W. J. Pettie and Company, Oklahoma City, Oklahoma

women working in fields, guiding the plow, and doing a man's labor.

It is not so very long ago that women in peace time worked down in the coal mines in more than one country of Europe.

As a rule, the old world attitude toward women is one of masculine superiority. Naturally, therefore, there are few washing machines in the homes of Europe.

Whatever may be the view as to the wisdom and justice of making life easier for our women folk—and only people with medieval minds question the wisdom and justice of it—certain it is that the average American wants his wife to have every obtainable comfort and to make life as easy and pleasant as possible for his mother and sister and wife.

"The feature of this window is the wax figure of a man standing by a tub doing the family washing.

"The card in the center reads: 'Married men! How long would you last if you were compelled to do this once every week. Your wife or servants have to, if you don't own a White Way.'

"Cotton was used as a substitute for soap suds. A few middy blouses were placed in the washing machine."

This window display attracted very much attention because it was original and told the truth. The sales of washing machines resulting from the display were above the average for the time during which the display was in effect.

Nothing is sold "below value."

You Can Speed Up Your Service with a Power Elevator.

There is not a very big difference in prices of hardware among the retail hardware stores of any given city or town.

People are not attracted to the average hardware store, therefore, by the inducement of lower than average prices.

The main factor in building up a loyal clientèle is the combination of service and friendliness.

An essential element of service is promptness—at least in northern countries.

Especially in the industrial centers, people in business hours are always in a hurry. They want the thing they are buying delivered as soon as possible. They haven't much time for lolling against the counters and leisurely inspecting the goods in a store.

Therefore, they have come to rely a great deal upon the judgment of the dealer and upon his willingness to make prompt deliveries, as well as to wait upon them with the least amount of delay.

The problem of building up service of the store becomes one of paramount importance. There are various methods for solving it.

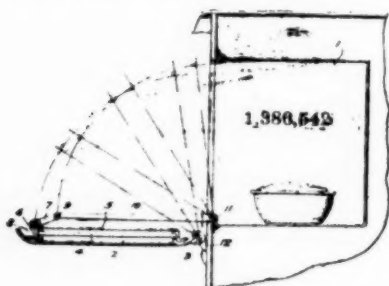
A big help in bettering and quickening the service of a store is the application of power to the elevator used for carrying commodities back and forward from the basement to the first floor or to the upper floors.

Any hand elevator now in use in a hardware store can be profitably changed to a power elevator by the use of such a simple device as the Kimball Electric Attachment. It is easily installed. Merely it requires the removal of the large pull wheel and the putting on of the motor in its place. It gives a speed of twenty feet a minute and a capacity of 1800 pounds.

This attachment, together with full instructions and terms, can be obtained from the Kimball Brothers Company, 902 Eleventh Avenue, Council Bluffs, Iowa.

Patent Rights Are Granted for Oven Door.

Under number 1,386,542, United States patent rights have been granted to Michael Thiery, Cincinnati, Ohio, for an oven door. It is described as follows:



In a device of the class described, an oven casing, a glazed oven door providing a closure for the casing hingedly connected to the casing, a cover plate pivotally secured upon the inside face of the door for covering the glazed portion of the door when the door is open, and a link having one end pivotally connected to the inside of the oven casing opposite the hinged end of the cover plate, and its opposite end pivotally connected to said cover plate for swinging said plate with the swinging movement of the door to a position parallel with the plane of the door covering the glazed portion thereof when the door

is open and to a position at right angles to the doors when the door is closed.

Solves the Problem of Garbage Disposal.

In more than one city of America garbage accumulates in the alleys and end of lots for weeks at a time before being removed.



Wall Type of Incinerite.

The chronic lack of appropriations for municipal cleanliness is the apparent cause of this undesirable state of affairs.

It becomes a pressing problem how to dispose of such garbage and its disagreeable odors and danger to health.

A safe and certain solution is to be found with the use of the Incinerite which completely burns all the garbage without odor.

Waste is deposited in the Incinerite as it accumulates. At any convenient time, the gas is lighted and the Incinerite consumes the waste and garbage, leaving only a small quantity of sterile ash.

This garbage and waste burner is made in four portable sizes and in a Wall Type as shown in the accompanying illustration.

It is manufactured by E. C. Stearns and Company, Syracuse, New York, who will gladly send full particulars and dealers' terms upon request.

Heller Brothers Absorb Two Other Tool Companies.

According to announcement made on September first, the Rex File Company and the Vixen Tool Company, have been consolidated with the Heller Brothers Company, Newark, New Jersey.

Paul E. Heller, President of the Heller Brothers company, states that this consolidation will result in better service to both hardware dealers and consumers and at the same time continue the production of the excellent quality files, rasps, tools of similar character and steels, for which the latter Company has an enviable reputation. The Heller Brothers Company was founded in 1836, so that it has been in business 85 years.

Walter D. Craft, Secretary-Treasurer of the Vixen Tool Company, will assume the post of Domestic Salesmanager of the consolidated companies.

Group Meetings of Hardware Dealers Are Being Well Attended.

Reports from many parts of the country indicate that the group meeting plan is becoming popular with the retail hardware dealers.

Two groups met recently at Houston and Brownwood, Texas, State Secretary A. M. Cox, Dallas, was present at both gatherings, and J. D. Martin, of Bryan, and Lee Watson, of Brownwood, acting as chairmen.

At South Bend, Indiana, the North Central Group of the Indiana Retail Hardware Association held a meeting on August 25th, this being the first of 22 sim-

ilar gatherings to take place during the coming fall and winter.

Another group meeting was held August 29th at Culver, Indiana.

The principal speakers at both meetings were: Herbert Sheets, National Secretary; G. F. Sheely, State Secretary, and C. W. Hilgeson, Field Secretary of the Indiana Association.

Exception was taken to the general idea that price reductions have been put into effect only when stock has been replaced. "The big majority of dealers have passed reductions on as soon as the new prices were quoted to them," said one speaker. The matter of urging the manufacturers to keep the public informed of price declines was discussed.

Announces Change of Convention Dates.

Advices received from T. W. Dixon, Secretary-Treasurer of the Hardware Association of the Carolinas, Charlotte, North Carolina, announce a change of dates of the convention of that association from May 9, 10, and 11, 1922, to May 17, 18, 19, and 20, 1922.

The reason for postponing the convention is to avoid conflict with the meeting of another organization whose sessions are scheduled for May 9, 10, and 11, 1922.

Winston-Salem, North Carolina, is the city chosen for next year's convention of the Hardware Association of the Carolinas.

Forms Washing Machine Company.

The LaBelle Washing Machine Company has been organized at Ecorse, Michigan, by Hugh McLain, William H. Rouston, and Alfred Robinson.

Show Cards Help Quicken the Sale of Goods.

Commenting on the importance of show cards in the store and in window exhibits, a prominent display expert gives practical advice for their preparation and use, as follows:

The layout or the arrangement of the wordings is just as important as the correct formation of the letters. It is also just as important to make sure that all words are spelled correctly.

The phrasing of the cards must be selected with great care. They should be worded just as carefully as the advertising man selects his headings.

These wordings should tell something of an interesting nature about the goods they are illustrating.

The grammar should be carefully watched as errors here tend to reflect on the store.

Window cards should be given careful attention, especially the selection of the phrasings. These should be of such character as to tell the busy passerby something about the merchandise that will interest him or her at the first glance. When we can do that we are making our window cards bring in the dollars and that is what we are after.

Arrangement of cards both in the window and in-

terior of the store is important. You often see window cards placed tightly against the window-pane.

This is a mistake. They should be set back and placed in an artistic manner to harmonize with the way the rest of the window is trimmed.

Each card should be set out separately from stands, figures or drapes. Never lean a card up against a well-gowned figure. Nothing looks worse.

The popular method is to stand the card in front of a small "T" stand away from any other part of the display.

Care should be taken with interior store cards. Don't have a whole lot of mixed sizes of cards on the same counter.

Keep to uniform sizes as much as possible and keep them straight in their holders. They should be kept clean and the type used on them should be of a uniform size and style.

Incorporates to Deal in Tools.

Henry Owens & Company, Providence, Rhode Island, is the name of a new firm which has been incorporated to deal in tools. The capital stock is stated as \$10,000.

You Need Iron in Your Moral System.

It may be that the most universal material in all the universe as known to man is iron.

There are minerologists who believe that the entire earth is simply a mass of iron, molten in the center, harder near the surface, a solid outer ring upon the outside, covered by a crust of rocks and vegetation.

We are living in the Age of Steel (which by the way is only fifty years old and already called an "age"!) And each year but exposes more of the seemingly inexhaustible material.

Steel, the refinement of iron, is one of man's greatest achievements. But back of all the wonders of steel construction—skyscrapers to hair springs—there is the everlasting foundation of commonplace iron.

It is much the same with man.

His greatest refinements of genius have been created from the commonplace "iron" of character, common to all who discover it.

Never mind the surface appearance you may make. Remember you must be iron at the beginning to produce steel at the end.

Wrench Company Is Incorporated.

The Woodward Wrench Company, Springfield, Massachusetts, has been incorporated with \$500,000 capital by William S. Thompson, Charles M. Comins, Longmeadow, Massachusetts, Benjamin W. Woodward, and Euclid A. Blanchard, Chicopee, Massachusetts.

The crying evil of the young man who enters the business world today is his lack of application, preparation, thoroughness. He may have ambition but he is too often without the willingness to struggle to gain his desired end.—Theodore N. Vail.

Bureau of Business Research Sets Hardware Store Overhead at 21 Per Cent.

Figures compiled by the Bureau of Business Research of Harvard University indicate that in the majority of retail hardware stores the overhead appears to be about 21 per cent of sales. The lowest figure reported was 11.42 per cent, and the highest 36.3 per cent. The average selling expense is 7 per cent and the average for buying and management is 4.4 per cent.

The following figures express the percentages between the various expenses and the total sales:

	Lowest	Highest	Common
Wages of sales force.....	2.57	15.80	6.2
Other selling expenses.....	0.03	4.12	0.7
Total selling expense.....	3.02	15.8	7.0
Delivery expense		3.22	0.7
Buying, management and office salaries	0.66	9.64	4.0
Office supplies, postage and other management expense.....	0.08	1.87	0.3
Total buying and management expense	1.15	10.6	4.4
Rent	0.38	6.09	1.7
Heat, light and power.....	0.06	1.35	0.4
Taxes (except on buildings, income and profits).....	0.04	1.14	0.5
Insurance (except on buildings).....	0.08	1.02	0.4
Repairs of store equipment.....	0.01	1.11	0.1
Depreciation of store equipment.....	0.02	1.6	0.3
Total interest	0.95	8.95	3.3
Total fixed charges and upkeep expense	3.07	12.68	7.0
Miscellaneous expense	0.01	3.86	0.9
Losses from bad debts.....		6.8	0.5
Total expense	11.42	36.30	31.0

To realize a net profit of five per cent on the year's business, the hardware retailer must, therefore, add an average of a little over 35.1 per cent.

In comparison with these figures, the Bureau of Business Research points out, the overhead in retail drug stores averages 27.6 per cent, and in grocery stores, 14.6 per cent.

Coming Conventions.

Southern Association of Stove Manufacturers, quarterly meeting, Signal Mountain Inn, Chattanooga, Tennessee, September 19 and 20, 1921. W. H. Cloud, secretary, 216 Glendora avenue, Louisville, Kentucky.

American Hardware Manufacturers' Association, Marlborough-Blenheim Hotel, Atlantic City, New Jersey, October 17, 18 and 19, 1921. Fred D. Mitchell, Secretary-Treasurer, 4106 Woolworth Building, New York City.

National Hardware Association and auxiliary associations, Marlborough-Blenheim Hotel, Atlantic City, New Jersey, October 17, 18, 19, 20, 21, and 22, 1921. T. James Fernley, Secretary-Treasurer, 505 Arch Street, Philadelphia, Pennsylvania.

The Western Retail Implement, Vehicle and Hardware Association, Kansas City, Missouri, January 17, 18, 19, 1922. Exhibition at Convention Hall in charge of Louis W. Shouse. Headquarters, Coates House. Sessions in Century Theatre. H. J. Hodge, Secretary, Abilene, Kansas.

Pacific Northwest Hardware and Implement Association Convention, Davenport Hotel, Spokane, Washington, January 17, 18, 19, 20, 1922. E. E. Lucas, Secretary, Hutton Building, Spokane, Washington.

Oregon Retail Hardware and Implement Dealers' Association Convention, Imperial Hotel, Portland, January 24, 25, 26, 27, 1922. E. E. Lucas, Secretary, Hutton Building, Spokane, Washington.

Kentucky Hardware and Implement Association, Jefferson County Armory, Louisville, Kentucky, January 24, 25, 26, and 27, 1922. J. M. Stone, Secretary-Treasurer, Sturgis, Kentucky.

Indiana Retail Hardware Association, Convention and Exhibition, Athenaeum Hall, Indianapolis, January 24, 25, 26, 27, 1922. G. F. Sheely, Secretary, Argos.

West Virginia Hardware Association Convention and Exhibition, Wheeling, January 31, February 1, 2, 1922. James B. Carson, Secretary, 1001 Schwind Building, Dayton, Ohio.

Iowa Retail Hardware Association Convention and Exhibition, Coliseum, Des Moines, Iowa, February 6, 7, 8 and 9, 1922. A. R. Sale, Secretary-Treasurer, Mason City, Iowa.

Nebraska Retail Hardware Association Convention, Lincoln, February 7, 8, 9, 10, 1922. George H. Dietz, Secretary, 414-417 Little Building, Lincoln, Nebraska.

Michigan Retail Hardware Association Convention and Exhibit, Grand Rapids, Michigan, February 7, 8, 9 and 10, 1922. Karl S. Judson, Exhibit Manager, 248 Morris Avenue, Grand Rapids, Michigan. A. J. Scott, Secretary, Marine City, Michigan.

Oklahoma Hardware and Implement Association Convention and Exhibition, City Auditorium, Oklahoma City, Oklahoma, February 7, 8, 9, and 10, 1922. W. B. Porch, Secretary-treasurer, Oklahoma City.

Wisconsin Retail Hardware Association Convention and Exhibition, Milwaukee, February 8, 9, 10, 1922. P. J. Jacobs, Secretary, Stevens Point, Wisconsin.

Pennsylvania and Atlantic Seaboard Hardware Association, Inc., Convention and Exhibition, Philadelphia Commercial Museum, Philadelphia, February 13, 14, 15, 16, 17, 1922. Sharon E. Jones, Secretary, 1314 Fulton Building, Pittsburgh.

Illinois Retail Hardware Association Convention, Hotel Sherman, Chicago, February 14, 15, 16, 1922. Leon D. Nish, Secretary, Elgin, Illinois.

Minnesota Retail Hardware Association Convention, St. Paul, February 14, 15, 16, 17, 1922. H. O. Roberts, Secretary, 1030 Metropolitan Life Building, Minneapolis, Minnesota.

Ohio, Hardware Association Convention and Exhibition, Columbus, February 14, 15, 16, 17, 1922. Headquarters, Deshler Hotel. Exhibition, Memorial Hall. James B. Carson, Secretary, 1001 Schwind Building, Dayton, Ohio.

Missouri Retail Hardware Association Convention and Exhibition, St. Louis, Planters Hotel, February 21, 22, 23, 1922. F. X. Becherer, Secretary, 5106 North Broadway, St. Louis, Missouri.

New England Hardware Dealers' Association Convention and Exhibition, Paul Revere Hall, Mechanics' Building, Boston, Massachusetts, February 21, 22, 23, 1922. George A. Fiel, Secretary, 10 High Street, Boston.

Virginia Retail Hardware Association, Roanoke, Virginia, February 21, 22, and 23, 1922. Thomas B. Howell, Secretary, Richmond, Virginia.

New York State Retail Hardware Association Convention and Exhibition, Rochester, February 21, 22, 23, 24, 1922. Exhibition at Exposition Park. Headquarters and sessions at Powers Hotel. J. B. Foley, Secretary, 412-413 City Bank Building, Syracuse, New York.

Hardware Association of the Carolinas Convention, Winston-Salem, North Carolina, May 17, 18, 19 and 20, 1922. T. W. Dixon, Secretary-Treasurer, Charlotte, North Carolina.

Sheet Metal Contractors' Association of Indiana, Indianapolis, Indiana, May 15, 1922. Ralph R. Reeder, Secretary, 312 East Sixteenth Street, Indianapolis, Indiana.

National Association of Sheet Metal Contractors Convention and Exhibition in the Athenaeum, Indianapolis, Indiana, May 16, 17, 18, and 19, 1922. Edwin L. Seabrook, Secretary, 608 Chestnut Street, Philadelphia, Pennsylvania.

Retail Hardware Doings.

Illinois.

Charles Hartenbower has sold his hardware store at Streator to W. H. Griffin.

F. R. Diekhoff has purchased an interest in the hardware and implement business of George B. Wiemer Company at Delavan.

Frank E. Pennuto, one of the partners of the former Pennuto Brothers' hardware store, corner Collins and Liberty Streets, Joliet, has taken over the entire interest in the store. The name has been changed to Frank E. Pennuto hardware store.

C. L. Boyles has traded his hardware and implement business at Albion to Walter W. Myers of Monon, Indiana, for a 320 acre stock and grain farm.

Iowa.

Carl T. Cohrt of Traer has purchased the interest of James Dalgliesh in the hardware firm of Dalgliesh and Smith at Grundy Center. The firm name will be changed to Smith and Cohrt.

E. J. Pollock of Colfax has purchased the hardware store of Bert McKinley at Morning Sun.

Charles Feller has purchased the hardware store of J. N. Nelson at West Union.

Michigan.

Banta and Kitchen have purchased the hardware stock of A. R. Mosgrove at Three Rivers.

C. Brown and Sons have opened a hardware store at Port Huron in the Porter Building on Indiana Avenue.

Minnesota.

Fire of unknown origin completely destroyed the Otto Gustmann hardware store at Clements.

Montana.

A new hardware store, The Monarch, has been opened in Augusta.

Advertising Help and Comment

Send Us Copies of Your Advertisements. Let Us Help You Get Bigger Results by Advice and Suggestions. The Service Is Free. Don't Hesitate to Take Advantage of It

It is doubtful if the average housewife would find herself palpitating with eagerness to rush to the store of the Nicholas Hardware Company after reading the firm's advertisement in *Oak Leaves*, Oak Park, Illinois.

In bold type she is told of "A Real Opportunity."

The company says, "We Are Offering Some Very Special Bargains on a Number of Washing Machines and Announce New

A Real Opportunity

WE ARE OFFERING SOME VERY SPECIAL BARGAINS ON A NUMBER OF WASHING MACHINES AND ANNOUNCE

New Lower Prices
ON CERTAIN

Electric Washers and Ironers

ALSO

Final Low Prices
ON A CLEARANCE OF

Refrigerators

Nicholas Hardware Co.

123 Marion St. Phone Oak Park 314-315

BRANCH APPLIANCE SHOP
828 So. Oak Park Ave. Phone Oak Park 831

Lower Prices on Certain Electric Washers and Ironers, also Final Low Prices on a Clearance on Refrigerators."

Nothing is said, however, to give the slightest inkling of the lower prices.

A dollar less than the usual price would be a lower price, or ten cents less on the refrigerators would be a final low price for the clearance.

The reader is left in the dark as to the extent of the opportunity which is offered by the advertisement.

Notwithstanding the reams of paper and printers' ink which have been expended in an effort to make merchants and their customers believe that prices are only a secondary consideration and quality always foremost in the minds of buyers, the fact remains that the vast majority of the people are tremendously interested in the question of what they have to pay for the things they purchase.

Of course, a good many advertisers labor under the mistaken idea that when prices of goods are in the neighborhood of one hundred dollars, it is not wise to publish the figures because, they think, the sum looks too big to the average customer and people would be frightened away from the store instead of brought to it.

This might have been true in the early days of washing machines as compared with washtubs and washboards.

But nowadays, so many people have washing machines that nearly everyone has a more or less distinct knowledge of the average cost of such appliances.

* * *

Although occupying barely two inches of single column space in the *Moon Journal*, Battle Creek, Michigan, the advertisement of Meulenberg Sheet Metal and Roofing Works relatively contains a great deal of information.

The services which Meulenberg is prepared to render to customers are comprehensive.

A timely sentence in the text is, "Let us put your furnace in shape for next winter, now."

In so small a space there is evidently no room for direct selling appeal.

Therefore, it would be advisable for Meulenberg Sheet Metal and Roofing Works to use a larger amount of space at sufficiently frequent intervals to permit of more specific statement of the kind of service and work which the firm is

equipped to perform for the public.

For example, an advertisement could be written giving the reasons why the furnaces should be put in shape for next winter and a great deal of business could be obtained from such an advertisement—busi-

We repair old eavetrough and hang new trough
WE REPAIR ANY TYPE OF ROOF

Let us put your furnace in shape for next winter, NOW.

Meulenberg
Sheet Metal & Roofing Works
423-425 E. Main St.
Phone 1777

ness enough to pay for the increased advertising space and leave a comfortable margin of profit.

* * *

Twice a year a return postal should be sent to persons on a mailing list, reading somewhat as follows: "Your name and address appear on our mailing list as they are reproduced on the reverse side of this card. We are eager that initials, name and address should be correct. If there is any error, will you please make note of it on the return portion of this postal?" When errors are reported, they should be corrected at once. Such prompt regard for accuracy is bound to win respect.

* * *

Avoid negative suggestion, says Dr. Frazier Hood, professor of psychology. Never present a situation where a choice can be made between buying or not buying.

Increase the urgency for buying rather than try to knock out the idea of not buying.

Be positive. Never knock your competitor, because it is both undignified and unpsychological.

When you knock your competitor you stir up and set off the instinct of protection and you have created a champion for the very idea which you want to crush.

Hussie Claims There Is No Valid Basis for Opposing Licensing of Installers.

Holds That Both Experienced Installers and House Owners Will Gain by Legislation Requiring License.

TO AMERICAN ARTISAN AND HARDWARE RECORD:

In your issue of August 27th, Mr. H. A. Miller expresses a desire to hear from "real heating men" on the subject of furnace legislation.

Modesty might, therefore, forbid an answer on my part, but as the President of the National Association of Sheet Metal Contractors has requested me to handle this matter for the Association Committee, I make bold to say that those who believe in good furnace legislation have for many years been advancing proof of its need, and I for one, have seen no real argument against it. In fact, it seems now as though all factions favored legislation of some kind. All of the Associations that have spoken on the subject have declared that legislation is desirable and needed.

The Western Warm Air Furnace and Supply Association and the National Association of Sheet Metal Contractors believe that installers should be licensed. The National Heating and Ventilating Association has declared against this clause. Right there is the great and, it seems to me, the only serious difference of opinion.

Mr. Miller suggests that the question be:

"Will those engaged in the furnace business gain or lose by the adoption of State Laws governing the installation of warm air furnaces?"

If he means by "those engaged," the legitimate furnace dealer who knows how to install, then my answer is emphatically, gain. But if he means those who are selling furnaces, as peanuts are sold, or by mail orders, my answer is, lose. I don't think this class would be benefited and I should hope they would not.

However, I think the question can not end there. Legislatures care very little for benefitting "those engaged in the furnace business." They look with suspicion on laws designed to benefit some particular class. The great common people, the buying public, is what legislatures are hired to represent and protect, and I submit that this great public is entitled to protection against quacks, incompetents and itinerants, just as much in the heating business as in the medical profession or the plumbing business. The improperly installed furnace is as great a menace to health as the incompetent drug clerk or plumber.

What does it profit a doctor, for instance, to toil for an education, if the law allows a man with no medical education to compete with him? What does it profit a furnace dealer to study the heating question and acquire the education of which AMERICAN ARTISAN speaks if the law allows incompetents to compete with him on even terms? It's unfair to the honest dealer and to the buying public, and these are the two interests to be considered.

This, very briefly, is an outline of the arguments in

favor of such legislation, and I have heard many more extended arguments in its favor at conventions of retail furnace dealers in years past.

Let me suggest to furnace manufacturers that the sentiment of retail dealers on these subjects could be learned by attending the retail dealers' conventions. At the recent splendid convention in Pittsburgh, I was astonished to see how few furnace manufacturers were in attendance.

The furnace dealers at that convention expressed themselves very clearly on this subject, so why should anyone be in doubt as to the sentiment of furnace installers? Why not admit that they mean what they say?

As Chairman of the Legislative Committee of the National Association of Sheet Metal Contractors, I welcome any suggestions or any arguments for or against such legislation and promise to give any letter sent me on the subject very careful consideration. Up to date, I have received many letters commending my course in this matter and not one word of censure. All of which leads me to believe that furnace dealers very largely approve.

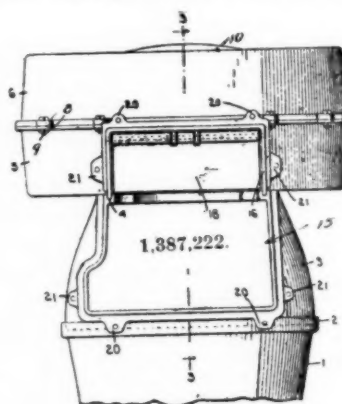
Yours very truly,

JOHN H. HUSSIE.

Omaha, Nebraska, September 3, 1921.

United States Patent Rights Are Granted for Furnace.

Willard G. Wise, Akron, Ohio, assignor to The Wise Furnace Company, a Corporation of Ohio, has been granted United States patent rights under number 1,387,222, for a furnace described herewith:



In a furnace construction, a combustion chamber, a radiator above the combustion chamber, the combustion chamber and the radiator being open at one side, an integral extension about the opening in the combustion chamber, and an integral extension about the

opening in the radiator, the said extension together forming a fuel feeding passageway.

A book you rent or borrow is like a transient guest in your home, to be gone in the morning and forgotten. The book you own is your abiding guest, your friend forever, your daily occupation in hours of meditation and of pleasant recreation.

Specifications for Installations of Warm Air Heating Apparatus.

Recommended by Warm Air Heating Branch of Trade Development Committee of National Association of Sheet Metal Contractors.

At the recent Annual Convention of the National Association of Sheet Metal Contractors, George Harms, Peoria, Illinois, presented a very valuable contribution during the session devoted to the Trade Development Committee in the following Specifications for Installation of Warm Air Heating Apparatus.

After some discussion, the specifications were adopted by the Convention, with provision for such changes as time and practice may prove advisable, and they stand therefore as the official guide for such work for the present. The Specifications follows:

Warm Air Heating Specifications.

Determining Size of Furnace to Be Used.

Measure each room separately, according to the following rule: For each square foot of glass surface, use one square inch of pipe area; for each ten square feet of outside wall surface, use one square inch of pipe area; for each one hundred cubical feet of space, use one square inch of pipe area.

Example.

A room 14x16x9 foot ceiling with 72 square feet glass surface, 210 square feet outside wall surface and 2,016 cubic feet of cubical contents.

72 square feet glass surface equals 72 square inches of pipe area.

210 square feet outside wall surface equals 21 square inches of pipe area.

2016 cubical feet of contents equal 20 square inches of pipe area.

Capacity of pipe required for this room would be 113 square inches or a 12-inch round pipe.

For North and West exposures add 10 per cent to size of pipes; for sleeping rooms on second floor, pipes can have 25 per cent to 40 per cent less capacity than for first floor. However, do not use less than 8-inch pipe, no matter how small the room. The above rule is based on favorable conditions, and on ordinary runs. On long runs, increase size of pipes accordingly, always using registers with a greater capacity than the capacity of pipe connected to same. When using the above rule in churches, auditoriums, bungalows and all buildings where there is no floored attic between ceiling and roof, ceiling must be figured as outside wall surface.

Next determine by this rule, the size pipe necessary for each room to be heated, add these areas, and select a warm air furnace guaranteed by the manufacturer to produce that number of square inches of heating ability.

Determining the Location of the Furnace.

Select a central location; if center of building cannot be used, a point slightly north or west of the center. Carefully consider smoke pipe length and elbows in locating furnace, making smoke pipe as short and straight as possible.

Floor of Furnace Room.

The floor of the furnace room should be of brick, tile, cement or other non-combustible material, and should be flat or level.

Mounting Furnace.

Examine each section and piece of furnace to see that it is perfect in every respect, before mounting. See that it is set both plumb and level. Any joints requiring cement must be well filled and bolts must be drawn up tightly. Whenever gaskets are used, they must be perfectly uniform in thickness, so as to accurately fit castings between which they are placed, after which the castings are drawn tightly together by means of bolts. All sections and joints must be properly fitted.

The Casing.

Furnace to be encased in galvanized iron—in no case less than 26-gauge. Before putting on casing, attach the base ring, if this is not already attached to base. In either case, cement the outer edge to floor, using Portland cement. This eliminates the possibility of dust and dirt entering the casing at that point. The galvanized

iron should then be drawn tightly around the casing rings and properly joined and connected to the furnace front with bolts; the center section of casing should be either double with an air space of not less than one inch, or should be lined with corrugated tin, iron or asbestos paper with corrugation of not less than one inch, the inner lining to be permanently attached to the casing.

CAUTION—Be very careful that the furnace is tightly encased, so that no cellar air, coal dust or dirt can enter from basement into the casing or warm air chamber.

Casing Collars.

Casing collar holes to be cut in hood at proper position, top of all holes to be on a level. Casing collars fitted into place with a proper flange on the outside and drawn up on the inside, making a perfectly fitting dust-tight joint. All collars to be of proper size for warm air pipes to which they are to be connected. Avoid taking a warm air pipe off casing immediately over feed door of furnace.

Warm Air Cellar Pipes.

The warm air pipes in basement are to be of the size determined by the foregoing rule. These should be made of bright tin, not lighter than I. C. weight, or of galvanized iron not lighter than 26-gauge, properly connected over the casing collar on the furnace, and conducted in as straight a line as possible to the boot or floor box, with as much pitch upward toward the final opening as possible; the joints of pipe, except where it is attached to the casing collar, to be double seamed, or lapped and soldered. Do not bend or cut into connections, or bend the warm air pipe into an oval shape, which may reduce the capacity of the pipe, or retard the free flowing of air, but see that the full capacity of the pipe is maintained from furnace to register box, and where warm air pipes go through brick, cement or stone foundations, a collar should be first placed in said foundation or wall, so that the warm air pipe will not touch the wall or foundation at any point.

Dampers.

A damper must be placed in each warm air pipe, close to the furnace. The handle of this damper should be either at the top or bottom of the pipe to give it more stability, the damper will remain in the position it is set.

Location and Size of Registers.

Warm air registers should be always placed in an inside wall, and under no circumstances should they be placed under or near an outside door or window. Where side wall registers are used, they should be of an improved pattern, which provides for connecting register to box without reducing capacity of air flow. All registers should have ample capacity to warrant an unimpeded flow of warm air.

Warm Air Floor Register Boxes.

Floor registers for warm air having a free air area not to exceed one hundred and seventy-five inches, shall be provided with a register border or double register box of tin or galvanized iron with not less than five-sixteenths of an inch air space between inner and outer boxes. Floor registers for warm air, having a free area more than one hundred and seventy-five inches, shall be provided with a register border or double register box with not less than five-eighths of an inch air space between inner and outer boxes.

Side Wall or Base Board Register Boxes or Heads. (If Double Wall Pipe.)

Register boxes or heads to be made in a manner to properly fit the style of registers for which they are intended, and to be made of bright tin or galvanized iron of double construction, with an air space of not less than five-sixteenths inch all around. The registers to be attached to them in a manner that will prevent any leakage of warm air between the joints of the boxes and registers.

Side Wall Register Boxes or Heads. (If Single Pipe Construction.)

Register boxes or heads to be made in a manner to properly fit the style of registers for which they are intended, and to be made of bright tin or galvanized iron.

all joints to be double seamed, and shall in no instance depend upon the solder.

The connection with the boot or foot piece shall be with an S hook attached to the box in a mechanical manner. None of the joints, nor the S hook shall depend upon solder to make them tight. The register box or head to be covered with asbestos paper, and not less than 12 pounds per 100 square feet.

Before installing register box or head, the studding or woodwork shall be lined with metal, and wall space back of head or box to be lapped with metal lath. A continuous space air shall surround the box or head on the sides next to the studding.

Stacks or Wall Pipes. (If of Single Construction.)

All stacks or wall pipes, heads, boots, ells, tees, angles or other connections shall be made of bright tin or galvanized iron. All such pipes shall be braced in a proper manner, or as not to obstruct the flow of air, but to retain its full capacity throughout. From, and including the boot or foot-piece, to and including the register head or box, this pipe is to be covered with asbestos paper, weighing not less than 12 pounds per 100 square feet.

Before installing this pipe, the studding, or any exposed wood work shall be lined with tin, or metal lath. An air space shall surround the entire pipe, from the foot-piece to head or box. All joints to be locked and held in place by means of lugs. No joints shall depend upon solder to make them tight.

Stacks or Wall Pipes. (If Double Wall Pipe.)

All stacks or wall pipes, heads, boots, ells, tees, angles or other connections should be made of bright tin or galvanized iron, and shall be made double, from and including the boot or foot-piece in basement, to the top of each and every stack, and register head on all floors of the building to be heated. There shall be a continuous, uniform air space of not less than five-sixteenths inch which must be maintained between the outer and inner walls of all such pipes and fittings, of all kinds, styles and descriptions, such pipes, heads, boots and other fittings to be of the styles, or equal to those accepted by the National Board of Fire Underwriters, all pipes and fittings to be secured firmly by lugs attached to the outer wall of stacks and fittings, and at no time shall nails be driven through these stacks or fittings at any point. No wall pipes or fittings should be used which depend on soldered joints, but various pieces of fittings should be assembled by means of joints which, for the purpose intended, are tight.

Cold Air Face.

The cold air face or faces to be made of wood, steel, or cast iron, set with top of name flush with floor and it must be of a sufficient free air capacity to warrant an unimpeded flow of air to the full capacity of the cold air pipe to which it is attached. No valves or dampers are permitted.

Cold Air Shoe.

This boot, or shoe, should be connected to the casing at the base, immediately above the base casing ring, and the opening should not extend higher than a line on the level with the grate of the furnace. The width of the shoe should be of proper measurement to make the opening of the same areas as that of the round cold air pipe to which it is connected.

Cold Air Connection.

A register box or plate to be attached to the cold air face and conducted either through a round or square pipe to the cold air shoe. The full area of all warm air pipe must be maintained throughout the cold pipe or pipes. This must be made of no lighter than 26-gauge galvanized iron, with all joints made tight.

The Smoke Pipe.

The smoke pipe shall be as short and direct as consistent with correct location of the furnace, and to be made of either black or galvanized iron not lighter than 24-gauge. It must clear any combustible material such as woodwork, at least 16 inches, and should it pass within 30 inches of any combustible wood work, such combustible material must be covered and protected by a metal shield so fashioned that a two-inch air space exists between this shield and the combustible material. This shield shall be no less in size than twice the diameter of the smoke pipe, and of a sufficient length to cover wood at all points. No smoke pipe shall pass through any wall or floor made of combustible material except in old buildings where other arrangements are impossible. In the event of the necessity of such an arrangement, these openings should be protected by sheet metal protecting ventilators, with an air space of not less than two inches on all sides.

Protection.

When it becomes necessary to place the top of any furnace casing or bonnet nearer than twelve inches from

the ceiling joists of the basement above the furnace, a metal shield, at least twenty-four inches larger in diameter than the furnace casing shall be hung from the ceiling or joists, directly over the casing or hood, permitting a space of at least one inch to exist between this shield and ceiling or joists. No furnace casing or bonnet coming nearer than six inches to the ceiling or joists should be allowed in any case. When the top of the bonnet or casing is more than twelve inches from the ceiling or joists in the basement, no shield will be required.

A distance of not less than eight inches should be maintained between top of furnace proper and the top of the casing or bonnet of such furnace.

Pipe Covering.

All warm air pipes shall be thoroughly covered with asbestos paper, this to be attached to pipes with asbestos paste, lap all joints, leaving no uncovered metal from casing collar to boot or register box connection.

Continuous Advertising Is Essential to Steady Profits.

There is no more erroneous idea than that a permanent, lasting business success can be built on a big, hit-them-in-the-eye advertising campaign of a few months' duration.

If such a campaign could be continued for about five years, this might be true, provided bankruptcy had not intervened.

Go over a list of products like Uneeda Biscuit, Gold Dust, Durham-Duplex Razors, Phoebe Snow of the "Road of Anthracite," the "Sunset Route" of the Southern Pacific, etc., which have become household by-words in America and you will find that their rise has been accompanied by steady, year-in and year-out persistent advertising.

They may have swelled into tremendous campaigns from time to time, but there has never been a period that their names were not being held generously before the public in one way or another.

Go Ahead and Do it.

Instead of wondering too long about what you would like to do, or should do, or think you are fitted to do, go ahead and do what turns up.

There is almost no kind of work which is not a preparation for the better performance of other work no matter what it may be.

All work develops certain habits of working. These are what count.

Nature gives us the means of success, but only our use of those means can bring the success.

The means of study—our eyes and gray matter—are already ours.

But the use of our eyes and mental powers are up to us entirely. We all have a handful of tools given us, but we are also given our hands to use the tools, and this is the catch.

There have been fine minds which have been failures.

This was not on account of the quality of the minds, but of the use which was made of them.

Take a chance on having your full quota of wits—your job is the "works."

A Philadelphia belle has married a man named Hugg, but that is no sign that she will be in the hospital half the time with her ribs fractured.—Houston Post.

Practical Helps for Tinsmiths

No Two Jobs Are Exactly Alike. Therefore, the Sheet Metal Worker Has to Meet Each Difficulty as It Comes. Send Your Problems to Us. Let Our Experts Help You.

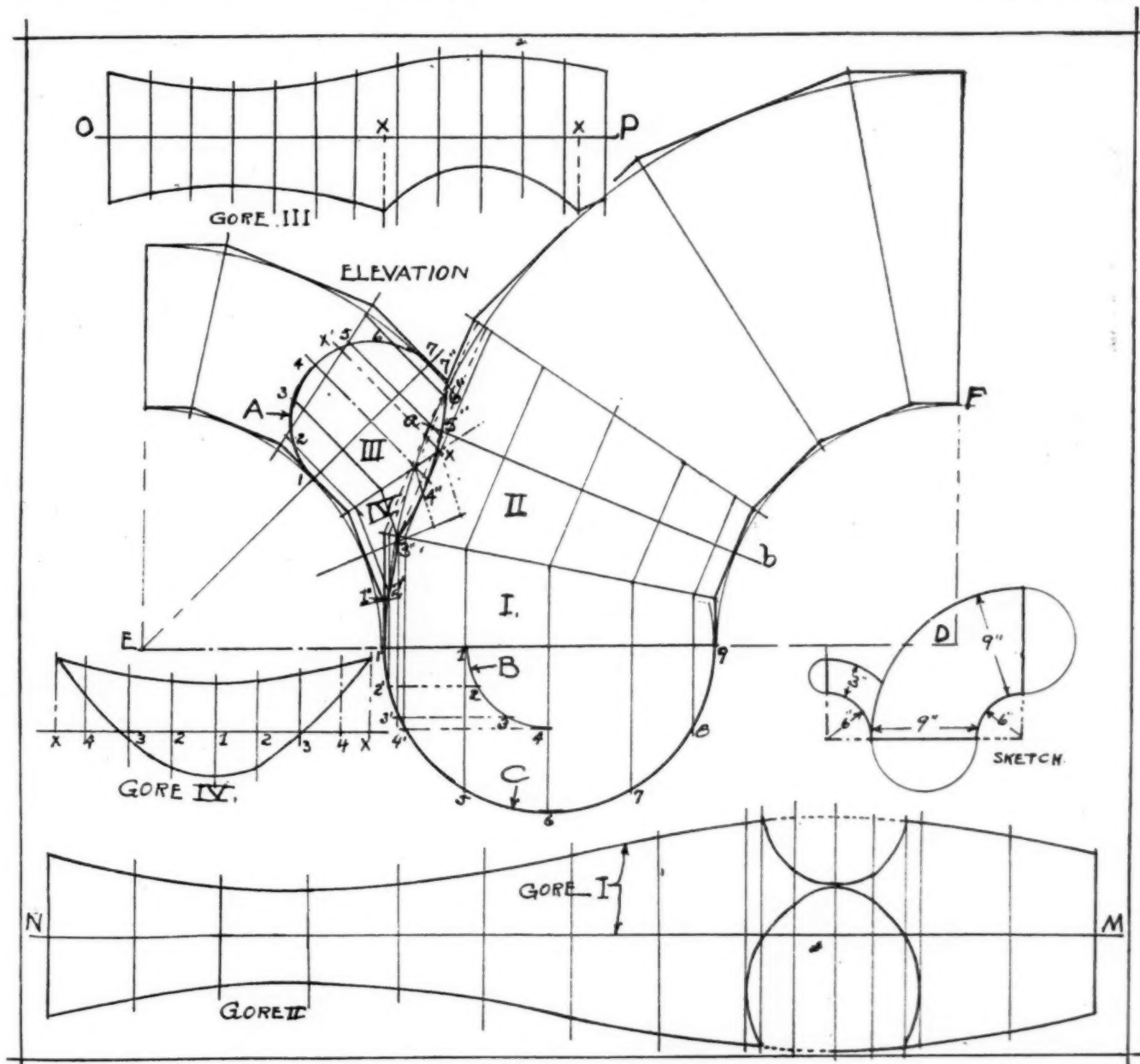
PATTERNS FOR INTERSECTING ELBOWS OF DIFFERENT DIAMETERS.

By O. W. Kothe, Principal St. Louis Technical Institute, St. Louis, Missouri. Written especially for American Artisan and Hardware Record.

Our sketch of elbow shown in this drawing was used in connection with a forge piping system with measurements as shown in sketch. It might have been possible to shift the smaller elbow with an angle to inter-

sect the straight pipe elbow, with a straight tee and that would be saved quite a bit of developing, but such possibilities a person never knows whether they are permissible from the bare drawing.

for the heel as D-1. Then treat the elbow for a 5-piece elbow, or 8 equal spaces in the heel and draw your miter lines as shown. Then describe the small elbow so it is tangent with the heel of the large one as F-1, and adding the diameter. Then treat this also for a 5-piece elbow, making the heel of throat into 8 equal spaces, and draw the miter lines as shown. Through the center of the gore III draw the line F-7 and from its center describe the half section A and divide in equal



Patterns for Intersecting Elbows of Different Diameters.

sect the straight pipe elbow, with a straight tee and that would be saved quite a bit of developing, but such possibilities a person never knows whether they are permissible from the bare drawing.

In this case the large elbow is described first, following the measurements for the throat as D-9, and

spaces. From here draw the lines parallel with the heel to intersect the miter line between gores III and IV, and then from this 4th gore extend them as shown.

Next describe the half section C and reproduce the half section A and set a quarter of it as B, with all its points and from here project them to intersect the

large section as in points 1-2'-3'-4'. The balance of C divide in equal parts and square up lines thereby producing elevation lines. Now where these lines intersect those lines from A, you establish the miter line as shown. Observe that the miter between gore III and IV crosses the developed miter in point X. This will be the high point as a start and the finish for the gore IV. So this point X is projected to section A as X'. This completes the working drawing, from which the patterns may be laid out.

To set out the pattern for the large elbow, we pick the girth from the section C and set it off on a line M-N. Draw stretchout lines and then pick each line from gore I of elevation and set on the top and on the bottom side M-N the same as you would develop any ordinary elbow pattern. Only in this case, the upper half of pattern will represent the gore I and they both together will represent the gore II. All the other gores can be laid off from this pattern. If the opening in the large elbow is desired, then from the line a-b pick those distances to points 7-6"-5"-X-4"-3" and set them off on the proper line working in each case from the center line M-N. This will give the outline for the large opening shown. In the same pattern we set off the opening as required for the heel of gore I. By picking the lines from base 1-9 to 1"-2"-3" and setting them off on similar lines, working from the center line M-N. In this way we lay off both patterns for openings in the one girth and they can be transferred in the other gores cut out of metal by simply quick punching through the lines thus established.

To set out the pattern for gores III and IV of the small elbow, they are set off in much the same way being careful to pick the girth from A and setting the point X' in its proper position. Otherwise, the process of common elbows is applicable. Laps for riveting the various gore pieces together must be allowed extra, also for seaming.

It will be observed that by extending the lines from section A direct into the large elevation, and thereby ignoring the miter between gores III and IV, a regular tee intersection would be made and this would save making the small gore piece IV separately, as this is always a loose part and gives more or less trouble than assembling.

Wants Opinions on Skylight Between Buildings.

TO AMERICAN ARTISAN AND HARDWARE RECORD:

I am a subscriber to your valuable paper and am quite well aware of the fact that when a person wants information regarding matters pertaining to the trade, AMERICAN ARTISAN AND HARDWARE RECORD can dig it up. I am, therefore, sending this inquiry and wish to ask you to publish it. The matter should be of interest to the sheet metal trade, and especially to manufacturers of skylights.

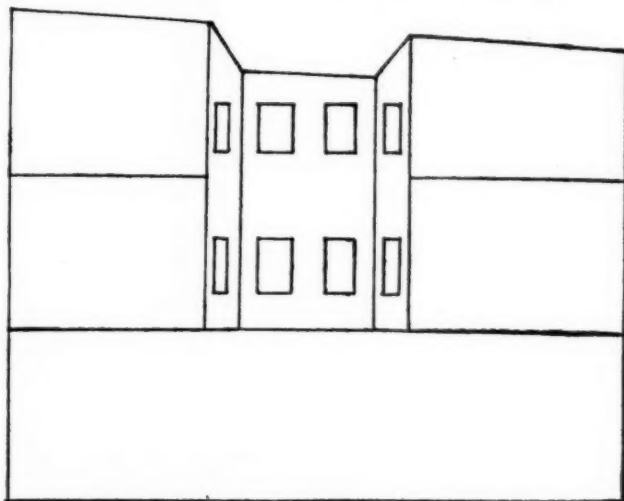
Will your subscribers kindly give their opinions on the following subject, through the columns of your paper:

I received an order to erect a skylight over a light shaft between two adjoining brick buildings, as shown in the enclosed sketch.

The rooms on one side of the building are used as living rooms, and on the other side there is one room on each floor used as a show room for a furniture store. The skylight was to be 10x20, double pitched, with a 24-inch ventilator in each end.

The City Building Inspector would not allow me to erect the skylight, saying that all such places had to be left open for ventilation.

I gave him my views in regard to the ventilators I intended to erect, also on the fire protection the skylight would give, but he insisted that the skylight must



Cross Section Through Center of Buildings, Showing Half of Light Shaft Over Which Skylight Was to Have Been Erected.

not be erected, and said that if I wanted to make an appeal to his decision I would have to take it before the Mayor and the City Council.

Before making this appeal I wish to have the views of the business men in the sheet metal trade.

I want to know whether or not the Building Inspector's decision is right, also if any of your subscribers have ever had experiences of this kind. All opinions on the subject will be welcomed.

I wish to thank you in advance for publishing this matter, also thank any who may contribute their views on the subject.

Respectfully,

ALFRED MARTIN,

Proprietor Rockford Cornice Works.

Rockford, Illinois, September 3, 1921.

Incorporates to Make Skylights.

The American Bar Lock Company, Brooklyn, New York, has been incorporated with a capital stock of \$75,000 to manufacture skylights and other metal products. The incorporators are C. H. Law and D. E. and L. B. Mulford.

Organizes Sheet Metal Works.

The Kolb Sheet Metal Works, 30 Orange Street, Newark, New Jersey, has been organized to manufacture fans, blowers, etc., by Norman L. Kolb and others.

Your store does not need to be the most expensively equipped in town to be the best. Just give the public the best service.

Greenberg Asks the Sheet Metal Contractor to Try an Experiment Which Will Increase His Profits.

Much More Is to Be Gained from Using Brains to Get More Business Than from Depending on Muscle to Earn a Living.

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by J. C. Greenberg, Cleveland, Ohio.

I suppose if I were to tell you that a little nursery rhyme book is a mighty good thing for the business man, you would laugh yourself sick. Well go ahead and laugh if you want to, but listen to this:

"Jingle jingle Jack,
A coin fell down the crack.
Twenty men and twenty wives,
With sticks and picks,
And pocket knives,
Couldn't get it back"

Sounds foolish doesn't it? It sounds like a kid's verse and has no business in AMERICAN ARTISAN AND HARDWARE RECORD which is the highest class trade magazine published. Everything sounds foolish if we do not understand it.

How about the Jingle Jack sheet metal man who lets his coin of profit drop down the crack of indifference and can not get it back?

How about the so-called business man who does not even know what real profit is because he has never had the pleasure of seeing it because it fell down that crack before he had ever seen it?

Once that profit is gone on any job you do, twenty men and twenty wives with sticks and picks and pocket knives will never get it out.

That is why some sheet metal men are poor and discredited.

In my way of thinking, poverty is a disgrace. Poverty proclaims the poor man to be incompetent. Incompetence is the greatest cause of failure.

The man who said that poverty is no disgrace was a fool.

He spread poisoned gas in this good world and many men use it as an alibi, and an alibi is the coward's excuse.

You may think that the writer is a cynic. You may think that the writer is a crank, but nevertheless, he is telling the truth.

Just stop and think!

Our business is not a luxury. The human being

must have shelter, and this shelter must be had.

We sheet metal men have it in our charge. It is a necessity to decent living.

We are bullied by the contractor, bullied by the public, and bullied by our labor. Oh when will we ever cease being Jingle Jacks?

We have become so accustomed to our plebian ways that we can not see things in a cheerful way. We have long ago forgotten where and what profit is.

We do not know how to get it, and we have become so used to poverty that we kid ourselves into thinking that it is no disgrace. It is a disgrace.

It is a disgrace to bring children into this world without providing for their future. They are entitled to our best efforts, and unless we get the profits that are due to us, we can not do our duty to those we have brought into the world. Just put this into your pipe and dream over it.

Yes, you will say, we are making profit. We figure right, and we get profits. This is true. I admit this, but are we doing enough work so that we have the profits more frequently?

There is more work to be done in sheet metal than there is in any other line. There are more possibilities in our profession than there ever were. Are we getting our share of it?

We are too much along the mechanical line. We are too much married to our tools and too little to business-building ideas.

Success lies only in the brain. It is not in the use of tools.

I will venture to say that if you will just try an experiment as the one I will give, you will double your usefulness. The experiment is this:

Some fine Monday morning, ditch your overalls. Put on a clean shave and your Sunday suit of clothes and get out after business. In so doing, you will increase the number of jobs and make more single profits.

Remember, please, that you can always hire the muscle, but you can not hire brains. They are too expensive. You must make your own business bricks which build brain power.

Stop being a Jingle Jack. Stop dropping your coins in the crack.

Be a real business man and prosper with the rest of the progressive world.

You are entitled to this, but you will not make the effort.

The sins of fear visit the punishment of poverty. It is a disgrace. To prove it, let me ask, "Are you proud of your poverty?" You may answer this question to yourself. I know the answer.



J. C. Greenberg.

This article is written to the man who needs it. It is not meant for the real honest-to-goodness business sheet metal man.

Let your wife read this. Let her put some real pep into your heart.

She has a natural intuition that man has not yet had the sense to attain. Let her see you as you are, and she will make you into a business man instead of a Jingle Jack.

I feel sure that many will not take kindly to this article, but if it hurts the one for whom it is intended, I hope it hurts good and hard. It will compel a cure.

Has Broad Control of Hardened Sheet Metal Screw Patents.

Admittedly, the invention of hardened sheet metal screws for joining sheet metal and making fastenings to metal is a great stride forward in the development of sheet metal craft.

Much of the credit for this achievement is due to the Parker Supply Company, Incorporated, 785 East 135th Street, New York City.

This Company owns or controls the patents on hardened sheet metal screws for joining sheet metal and making fastenings to sheet metal.

The Parker Supply Company, Incorporated, now announces that "Parker Hardened Sheet Metal Screws" may hereafter be bought not only from the Parker Supply Company, Incorporated, but from their authorized agents, the Kalon Company, Jersey City, New Jersey, who have been licensed by Parker Supply Company, Incorporated, to manufacture and sell hardened sheet metal screws under the trade name of "Kalon" and under the patents granted April 1, 1919, to the Parker Supply Company, Incorporated.

Solicits Plans for Use in Trade Development Book.

TO AMERICAN ARTISAN AND HARDWARE RECORD:

The Warm Air Furnace Section of the Trade Development book to be issued by the National Association of Sheet Metal Contractors will consist of many pages showing different styles of installation.

For this purpose the Committee is requesting the assistance of furnace manufacturers and installers.

They are asking for complete heating plans and specifications either of work that has already been installed or of jobs in prospect.

These plans will be inspected by a Committee selected for this purpose and those best suited for the purpose and covering the requirements of a first-class high-grade heating plan will be accepted and shown in the book.

No names of any of the furnace manufacturers or installers will be mentioned. The following plans are required:

Residence Heating.

1. Bungalow Gravity.
2. Two-story Residence Gravity Fan.
3. Flats Gravity Fan.
4. Apartments Fan.

School Heating.

1. Portable.

2. District.
3. Four and Eight-Room Schools Fan.

Church Heating.

1. Small Gravity.
2. Large Gravity Fan.

Store Heating.

1. One floor. (Different Types.)
2. With Flats above.
3. Bank.

Factory Heating.

1. Gravity.
2. Fan.

Garage Heating.

1. Gravity.
2. Fan.

The completion of this work requires considerable study and time. Therefore, the Committee asks that everyone interested immediately send in such plans. These can be sent to E. B. Langenberg, 4045 Forest Park Boulevard, St. Louis, Missouri, or George Harms, 1311 South Adams Street, Peoria, Illinois.

GEORGE HARMS.

Training for Success Is the Way to Succeed.

In a sense, it may be said that success is as much a trade as bricklaying or sheet metal work.

You may be a good singer without spending much time, or any time at all, on voice culture.

From a long line of ancestors who specialized in marksmanship, you may have inherited a natural talent for accurate shooting.

But no one inherits success.

Success comes only through mental training. It is not a matter of inheritance or chance.

The people of our day have an immense advantage over foregoing generations by reason of the fact that definite methods have been developed for training for success.

It does not matter at what age, twenty, forty, or fifty years, one begins to train himself for success.

There are schools and institutions which specialize in this kind of training.

For example, the St. Louis Technical Institute has worked out a system of instruction through home study correspondence courses by which any man who wants to succeed can acquire the necessary training.

The St. Louis Technical Institute is fortunate in having for its principal O. W. Kothe whose "Practical Helps for Tinsmiths" published weekly in AMERICAN ARTISAN AND HARDWARE RECORD have gained for him a nation-wide reputation.

He has a genius for teaching and for making the most intricate details of each craft simple to understand and easy to carry out in practice.

Workmen, foremen, superintendents, and others who desire to better themselves and to increase their knowledge and skill are advised to write to the St. Louis Technical Institute, 4543 Clayton Avenue, St. Louis, Missouri, for booklets on Business Administration and Higher Accountancy, Mechanical Drafting and Machine Drafting, Boiler Maker Laying Out and Steel Ships Laying Out, and Studies in Sheet Metal, Heating, and Ventilating Engineering.

Illustrations of New Patents

Watch This Page. Keep Yourself Informed Concerning Improved Devices Which May Save Labor in Your Shop or Add Another Source of Income to Your Retail Store.

1,385,915. Screwdriver. Manuel Hardey, San Francisco, Calif. Filed January 5, 1921.

1,385,994. Wrench. Alton B. Heimbach, Duluth, Minn. Filed August 29, 1919.

1,386,001. Razor Sharpening Device. Emanuel Jacobs, Detroit, Mich. Filed October 17, 1918.

1,386,061. Fishing Tackle. Herbert Lawrence Johnson, Yarmouth, Me., assignor to George F. Lowell, Freeport, Me. Filed December 29, 1920.

1,386,092. Washer. George H. Cole, Wenona, Ill. Filed April 1, 1920.

1,386,109. Wire Splice and Stretcher. Christian E. Hatfield, Florence, Okla. Filed December 22, 1920.

1,386,136. Cant-Slip Wrench. George Sibbald, Denver, Colo. Filed October 4, 1920.

1,386,147. Washboiler Protector. Max Wensauer, Sheboygan, Wis., assignor of one-half to August L. Maas, Sheboygan, Wis. Filed April 2, 1920.

1,386,149. Wrench. Allen C. Allan, Chicago, Ill. Filed April 26, 1920.

1,386,173. Holder for Dishclothes, Mops, or the Like. Asbury Hamilton, Brooklyn, N. Y. Filed December 11, 1919.

1,386,217. Wrench. John Zilliox, Orchard Park, N. Y. Filed November 14, 1919.

1,386,229. Wrench. Mark Belcher, Goose Creek, Texas. Filed March 3, 1921.

1,386,245. Washing Machine Tub. Vernor B. Edwards, Middletown, Ind. Filed April 22, 1921.

1,386,260. Hose Coupling. Gottlob Klumpp, New York, N. Y. Filed January 31, 1920.

1,386,311. Culinary Utensil. Elmer D. Brown, Fort Worth, Texas. Filed March 24, 1921.

1,386,325. Wrench. Andrew S. Fisher, Altoona, Pa. Filed October 16, 1919.

1,386,353. Safety Razor. Edward P. Norton, Oakland, Calif. Filed Feb. 25, 1920.

1,386,365. Adjustable Wrench Pliers. John A. Roberts, Rolfe, Iowa. Filed August 15, 1919.

1,386,399. Washing Machine. George Entrekin, Pittsburgh, Pa. Filed October 9, 1919.

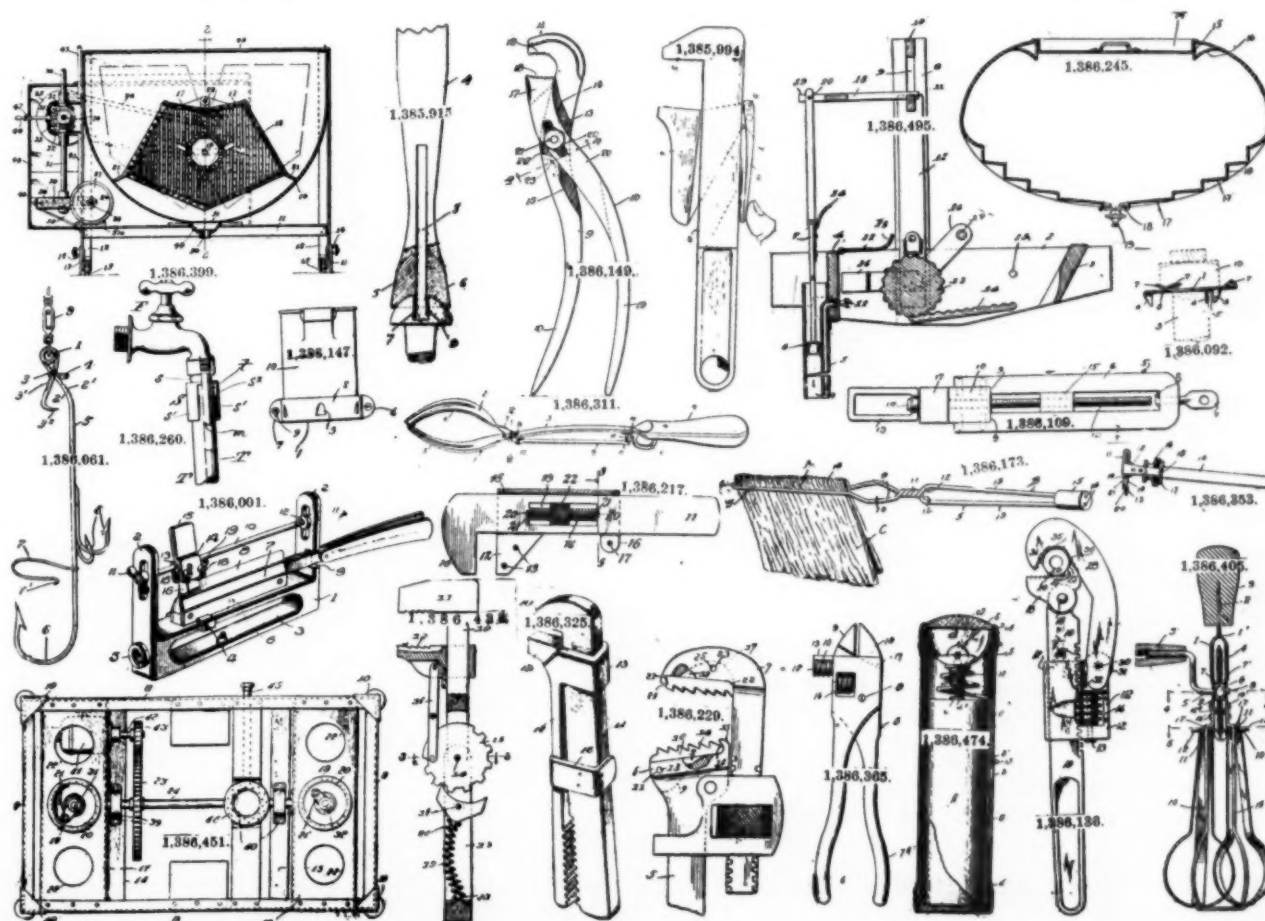
1,386,405. Egg Beater. Sidney C. Hills, Torrington, Conn., assignor to The Turner & Seymour Manufacturing Company, Torrington, Conn., a Corporation of Connecticut. Filed April 29, 1921.

1,386,433. Combination Wrench. William B. Shaw, Eaton, Colo. Filed January 30, 1920.

1,386,451. Washing Machine. William A. Brown, Chicago, Ill. Filed February 5, 1920.

1,386,474. Flashlight. Joseph Vince, Brooklyn, N. Y. Filed June 26, 1920.

1,386,495. Washing Machine. Simon J. Harding, West Baldwin, Me. Filed February 10, 1920.



Weekly Report of the Markets

General Conditions in the Steel Industry. Review of Prices and Tendencies in Sheet Metals, Pig Iron, etc.

STEEL INDUSTRY CONTINUES TO IMPROVE.

The gain in steel mill operations that has been noted during the past six weeks is being held although during the week just past some variations in schedules temporarily gave operators a less optimistic view of the situation.

Steel is being produced at the present time at about 25 per cent of capacity, as against less than 20 per cent some six weeks ago.

The plants of the leading interest are turning out steel at the rate of about 30 per cent, while those of the independents are doing somewhere in the neighborhood of 20 per cent.

During August the country's output of steel was increased by between 3 and 4 per cent.

The trend today in the steel industry is upward, but it is hard to forecast just where the improvement in the immediate future is to come from.

The August output of steel ingots for the entire country is estimated at about 1,050,000 tons, the plants of leading interest were operating at about 30 per cent, and the independents about 29 per cent of capacity.

This compares with 865,000 tons in July and an average operating rate by the corporation of 26½ per cent as against 15½ per cent by the independents.

Much has been said about the doubling of the country's steel capacity during the war, the thought being that the increased demand was transitory only.

Some enlightening figures have just been published on this subject, which show that the country's steel capacity was doubled between 1910 and 1920, but that this expansion was not in excess of the normal expansion of the industry during normal times, inasmuch as the steel making capacity of the country has been doubled between 1881 and 1886, five years, again between 1886 and 1892, six years, between 1892 and 1900, eight years, and from 1900 to 1910, a period of ten years.

The pig making capacity of the country doubled almost every ten years from 1880 to 1910, but the expansion was not so great between 1910 and 1920.

Steel.

Competition is keen and prices are soft. It is reported from Youngstown that plates have been sold as low as 1.60c, base Pittsburgh, but the news is not confirmed and the general asking price is still \$1.70 to \$1.75, with the inside figure applying to an exceptionally appreciable tonnage.

Oil producers are inquiring for considerable material, but tank builders are said to be disinclined to extend the credit terms asked.

Youngstown reports a fair demand for merchant pipe and that wire products are firm at \$2.50 to \$2.75 for wire and nails.

Among recent inquiries from the railroads are noted one for from 10 to 20 underframes for 50-ton tank cars by the Fleischman Transportation Company, the Bangor & Aroostook is again in the market for the 200 40-ton box cars the original inquiry for which lapsed, the Pittsburgh Steel Company is in the market for from 15 to 25 all steel gondolas of 40 tons capacity, the Chicago Burlington & Quincy for 1,500 tons of plates and 350 tons of shapes, the Mathieson Alakli Works, New York, for 20, 30-ton cars and the Illinois Central which has out an inquiry on the repairs to 1,250 cars has just placed orders for more than 2,000 cars with the following concerns: The Pullman Company, the Haskell-Baker Car Company, the American Car & Foundry Company, Mitsui & Company, New York, is taking bids on 25 miles of 60-lb. steel rails for the Meiki Electric Railways of Japan and it is stated that an additional 29 miles will be contracted for at a later date.

Bars, plates and shapes are being purchased by car builders for repair work and contracts for some 8,000 tons of this material are now in process of being placed.

Copper.

An estimate of the statistical position of copper has been prepared by the mines department of a large Wall street firm, leading to the conclusion that about twelve months must elapse before surplus stocks of the metal are disposed of, assuming the present rate of consumption. The survey says in part:

"Estimates of refined and blister copper above ground at the present time vary from 700,000,000 pounds to 1,250,000,000 pounds.

"Assuming 1,000,000,000 pounds as the correct figure and allowing 300,000,000 pounds as the normal amount ordinarily in process from mine to finished product, the real surplus which must be disposed of before the industry is again on a sound basis, is probably in the vicinity of 700,000,000 pounds.

"Domestic consumption in the period under review has averaged 56,600,000 pounds monthly and exports 40,500,000 pounds monthly, or a total of over 97,000,000 pounds.

"It is not considered likely that production and imports for some time to come will exceed 40,000,000 pounds a month.

"Therefore, assuming the same rate of sales as have prevailed this year, the estimated surplus would be practically disposed of in a year's time, with sales exceeding production by 684,000,000 pounds."

It is estimated that deliveries into foreign and domestic consumption during August totaled 85,000,000 pounds. Of this amount probably 45,000,000 pounds went abroad and the remainder was taken by domestic consumers. The current output of refined copper is

at the rate of approximately 80,000,000 pounds a month, and in all probability the stocks of refined copper in this country were reduced somewhat last month, as compared with a slight gain during the month preceding.

A decline of $\frac{1}{2}$ cent per pound occurred in the Chicago price of copper sheet, mill base, making the present quotation $19\frac{1}{4}$ cents.

Tin.

It is estimated that consumption of tin in this country for the first seven months of the current year was between 2,000 and 2,500 tons monthly, while deliveries into consumption for the first six months have been only about 1,500 tons.

The deliveries into consumption during August of 3,320 tons were almost double those of any previous month this year, and August deliveries in London of 2,004 tons were exceeded only four times during the past five years.

An advance of $\frac{3}{8}$ cent per pound took place during the week in Chicago prices. Pig tin went up from $29\frac{3}{4}$ cents to $30\frac{1}{8}$ cents per pound and bar tin from $31\frac{3}{4}$ cents to $32\frac{1}{8}$ cents per pound.

Solder.

No additional changes are recorded in Chicago prices of solder. The quotations now in effect are as follows: Warranted, 50-50, per hundred pounds, \$18.75; Commercial, 45-55, per hundred pounds, \$17.25; and Plumbers', per hundred pounds, \$16.00.

Lead.

Chicago prices of lead increased 5 points during the week. American pig lead advanced from \$4.70 to \$4.75 per hundred pounds and bar lead from \$5.45 to \$5.50 per hundred pounds.

Joplin advices state that a keen demand sent ore prices up and last week closed with a price of \$54 as basis. Joplin shipments last week amounted to 964 tons, as against 1,040 tons the week previous, while shipments since the first of the year total 40,102 tons, as compared with 61,543 tons during the corresponding period last year. High grade sulphide ore is quoted at \$54.80 and the 80 per cent grades from \$50 to \$54.

Zinc.

There is a light demand at best for zinc, but the market holds steady at the low prices quoted, with sellers East St. Louis at $4.20@4.25$ cents.

The New York Metal Exchange still quotes spot New York at 4.55 cents and spot East St. Louis at 4.20 cents against 4.15 cents bid, 4.25 cents asked. October and November were advanced $2\frac{1}{2}$ points to $4.22\frac{1}{2}$ cents, against 4.15 cents bid, 4.30 cents asked.

Sheets.

According to the Iron Trade Review's report from Pittsburgh, sheet sales with some companies in that district have again settled to moderate amounts after a distinct improvement in business reported one week ago.

Other companies report they have not lost ground

in comparison with bookings a week ago and expect to increase operations this week.

The leading interest last week was operating at a little better than 42 per cent but this week will be on a basis of 50 per cent. The prices as announced recently by independent makers, appear to be holding firmly and nothing less than these have been encountered in the market this week.

Some producers of sheets believe that these prices will be substituted with higher ones before many weeks.

Jobbers continue to patronize the common sheet market and their orders seldom are less than from one to three carloads.

Last week operations at independent plants averaged about 40 per cent but expectations are that the present week will show a distinct increase.

Tin Plate.

Tin plate production has shown a distinct improvement during the past two weeks and this week is expected to show an even larger gain.

A considerable amount of business was placed during the last two weeks of August and the execution of a large proportion of this business has reduced stock tin plate materially, according to reports in the trade.

The Weirton Steel Company plans to expand its operating schedule this week. The tin mill schedule of the Jones & Laughlin Steel Company is at the rate of $63\frac{1}{3}$ per cent of normal. The leading interest which was operating the past week at 40 per cent now is found with 50 per cent of capacity engaged.

Production plate is firmly quoted at \$5.25 per base box, Pittsburgh. Some mills are moving their stock plate at \$4.75 per base box, Pittsburgh, on all business totaling a carload or more.

Old Metals.

Wholesale quotations in the Chicago district which should be considered as nominal are as follows: Old steel axles, \$12.00 to \$12.50; old iron axles, \$17.00 to \$18.00; steel springs, \$11.00 to \$11.50; No. 1 wrought iron, \$9.00 to \$9.50; No. 1 cast, \$12.00 to \$12.50; all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 6 cents; light brass, 3.50 cents; lead, 2 cents; zinc, 1.50 cents; cast aluminum, $8\frac{1}{2}$ cents.

Pig Iron.

There is every indication of a permanent improvement in the pig iron situation. Local selling agents reported unusually good business already this week.

One furnace representative has sold this week upward of 1,200 tons of No. 1 and No. 2 iron in lots ranging from carloads to 500 tons, partly for immediate shipment and partly for delivery over the balance of the year.

There is also an inquiry for one lot alone of some 3,500 tons of foundry for immediate shipment, which is likely to call out some spirited bidding.

The meltings are estimated to have increased at least to some extent and demand in all directions has improved sufficiently to more than absorb the increased output, so that statistically the market is as strong, if not stronger, than ever.

Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS

PIG IRON.

Chicago Foundry.....	\$21 00
Southern Fdy. No. 2.....	25 67
Lake Sup. Charcoal.....	33 59
Malleable	21 00

FIRST QUALITY BRIGHT TIN PLATES.

	Per Box
IC 14x20 112 sheets	\$11 25
IX 14x20.....	12 35
IXX 14x20.....	13 80
IXXX 14x20.....	15 15
IXXXX 14x20.....	16 60
IC 20x28.....	22 50
IX 20x28.....	24 50
IXX 20x28.....	27 60
IXXX 20x28.....	30 30
IXXXX 20x28.....	33 20

COKE PLATES

Cokes, 180 lbs....	20x28 \$13 40
Cokes, 200 lbs....	20x28 13 70
Cokes, 214 lbs....	IC 20x28 14 05
Cokes, 270 lbs....	IX 20x28 16 25

BLUE ANNEALED SHEETS.

Base.....	per 100 lbs. \$3 33
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ONE PASS COLD ROLLED BLACK.

No. 18-20.....	per 100 lbs. \$3 95
No. 22-24.....	per 100 lbs. 4 00
No. 26.....	per 100 lbs. 4 05
No. 27.....	per 100 lbs. 4 10
No. 28.....	per 100 lbs. 4 15
No. 29.....	per 100 lbs. 4 25

GALVANIZED

No. 16.....	per 100 lbs. \$4 40
No. 18-20.....	per 100 lbs. 4 55
No. 22-24.....	per 100 lbs. 4 70
No. 26.....	per 100 lbs. 4 85
No. 27.....	per 100 lbs. 5 00
No. 28.....	per 100 lbs. 5 15
No. 30.....	per 100 lbs. 5 65

BAR SOLDER.

Warranted,	
50-50.....	per 100 lbs. \$18 75
Commercial,	
45-55.....	per 100 lbs. 17 25
Plumber's.....	per 100 lbs. 16 00

ZINC.

In Slabs	\$4 60
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SHEET ZINC.

Cask lots	11c
Less than cask lots.....	11 1/4-11 1/2c

COPPER.

Copper Sheet, mill base...	\$0 19 1/4
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LEAD.

American Pig	\$4 75
Bar	5 50
Sheet.	
Full coils.....	per 100 lbs. \$7 75
Cut coils.....	per 100 lbs. 8 00

TIN.

Pig tin	29 1/2c
Bar tin	32 1/2c

HARDWARE, SHEET METAL SUPPLIES, WARM AIR HEATER FITTINGS AND ACCESSORIES.

ADZES.

Coopers'.	
Barton's	Net
White's	Net

ALARM CLOCKS.

Big Ben and Baby Ben...	per doz. \$28 80
America	13 56
Tattoo	28 50

AMMUNITION.

Shells, Loaded, Peters.	
Loaded with Black Powder.	18%
Loaded with Smokeless Powder	18%

Winchester.

Smokeless Repeater Grade,	10 & 4%
Smokeless Leader Grade,	10 & 4%
Black Powder.....	10 & 4%

U. M. C.

Nitro Club.....	10 & 4%
Arrow	10 & 4%
New Club.....	10 & 4%

Gun Wads—per 1000.

Winchester 7-8 gauge.	10&7 1/2%
" 9-10 gauge.	10&7 1/2%
" 11-28 gauge.	10&7 1/2%

Powder.

DuPont's Sporting, kegs.	\$11 25
" " 1/4 kegs	3 10
DuPont's Canisters, 1-lb.	56
" kegs.	22 00
" 1/4 kegs	5 75
" canisters	1 00
Hercules "E.C." kegs.....	22 50
Hercules "Infallible," 25 can drums	22 00
Hercules "Infallible," 10-can drums	9 00
Hercules "E.C." and "Infallible," canisters.....	1 00
Hercules W. A. 30 Cal. Rifle, canisters	1 25
Hercules Sharpshooter Rifle, canisters	1 25
Hercules Bullseye Revolver, canisters	1 00

ASBESTOS.

Paper up to 1/16.....	10c per lb.
Millboard 3/32 to 1/2.....	10 1/2c per lb.
Corrugated Paper (250 sq. ft.).....	\$6.50 per 100 lbs.
Rollboard	11c per lb.

AUGERS.

Boring Machine.....	40 @ 40&10%
Carpenter's Nut.....	50%
Hollow.	
Bonney's.....	per doz. \$30 00
Post Hole.	
Iwan's Post Hole and Well	30 and 5%
Vaughan's, 4 to 9 in., without handles.	per doz. \$14 00
Ship.	
Ford's	Net

AWLS.

Brad.	
No. 3 Handled.....	per doz. \$0 65
No. 1050 Handled	1 40
Patent asst'd, 1 to 4	85

Harness.

Common	per doz. \$1 05
Patent	" 1 00

Peg.

Shouldered	" 1 60
Patented	" 75

Scratch.

No. 1S, socket	
Handled	per doz. \$2 50
No. 344 Goodell-Pratt, list less.....	35-40%
No. 7 Stanley.....	per doz. \$2 25

AXES.

First Quality, Single	
Bitted (unhandled), 3 to 4 lb., per doz.....	14 50
Good Quality, Single	
Bitted, same weight, per doz.	13 00

BAGS, PAPER, NAIL.

Pounds ..	10 16 20 25
Per 1000.....	\$5 00 6 50 7 50 9 00

BALANCES, SPRING.

Universal.	
Sight Spring.....	List less 25%
Straight	List less 25%

BARS, WRECKING.

V. & B. No. 12.....	\$0 45
V. & B. No. 24.....	0 75
V. & B. No. 324.....	0 80
V. & B. No. 30.....	0 85
V. & B. No. 330.....	0 90

BEATERS.

Carpet.	Per doz.
No. 7 Tinned Spring Wire.....	\$1 10
No. 8 Spring Wire Cop- pered	1 50
No. 9 Preston.....	1 75

BELLS.

Call.	
3-inch Nickered Rotary Bell,	
Bronzed base.....	per doz. \$5 50

Cow.	
Kentucky	33 1/2%

Door.	Per doz.
New Departure Automatic.....	Net

Rotary.	
3 -in. Old Copper Bell.....	Net
3 -in. Old Copper Bell,	
fancy	Net
3 -in. Nickered Steel Bell.....	Net
3 1/2-in. Nickered Steel Bell.....	Net

Hand.

Hand Bell, polished.....	
.....	List plus 15-10%
White Metal.....	List plus 15-10%
Nickel Plated.....	List plus 10%
Swiss	Net

Miscellaneous.

Church and School, steel alloys	30%
Farm, lbs..	40 50 75 100
Each	\$3 00 3 75 5 50 7 25

BEVELS, TEE.

Stanley's Rosewood handle, new list	Nets
Stanley iron handle.....	Nets

BINDING CLOTH.

Zinc	55%
Brass	40%
Brass, plated	60%

BITS.

Auger.

Jennings Pattern.....	Net
Ford Car.....	List plus 5%
Ford's Ship.....	" 5%
Irwin	35%
Russell Jennings.....	Plus 15%
Clark's Expansive.....	33 1/2%
Steer's " Small list,	\$22 00..5%
" " Large "	\$26 00..5%
Irwin Car.....	35%
Ford's Ship Auger pattern	
Car	List plus 5%

Center	10%
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Countersink.

No. 18 Wheeler's.....	per doz. \$2 25
No. 20	" 3 00
American Snailhead	" 1 75
" Rose ..	" 2 00
" Flat ..	" 1 40
Mahew's Flat ..	" 1 60
" Snail ..	" 1 90

Dowel.

Russell Jennings.....	plus 20%
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Gimlet.

Standard Double Cut Gross	\$3 40
Nail Metal Single	
Cut	Gross \$4 00—\$5 00

Reamer.

Standard Square.....	Doz. \$2 50
American Octagon.....	" 2 50

Screw Driver.

No. 1 Common.....	Each 18c
No. 26 Stanley.....	Each 70c

BLADES, SAW.

Wood.

Atkins 30-in.	
Nos.	6 40 26
	\$8 90 \$9 45 \$5 40
Disston 30-in.	
Nos.	6 66 26
	\$9 45 \$10 05 \$9 45

BLOCKS.

Wooden	20%
Patent	20%

BOARDS.

Stove.	Per doz.
26x26, wood lined.....	\$14 45
28x28, " "	16 95
30x30 " "	19 00
26x26, paper lined.....	\$ 8 15
28x28, " "	9 10
30x30, " "	10 80

Wash.

No. 760, Banner Globe (single)	per doz. \$5 25
No. 652, Banner Globe (single)	per doz. 6 75
No. 801, Brass King, per doz.	8 25
No. 860, Single—Plain Pump	6 25

BOLTS.

Carriage, Machine, etc.

Carriage, cut thread, 3/4 x 6 and sizes smaller and shorter	60%
Carriage sizes larger and longer than 3/4 x 6.....	50-10%
Machine, 3/4 x 4 and sizes smaller and shorter.....	60-10%
Machine, sizes larger and longer than 3/4 x 4.....	50-10-5%
Stove	70-10%

Mortise, Door.

Gem, iron	5%
Gem, bronze plated.....	5%

Barrel.

Cast	Net
Wrought	"
Wrought, bronzed.....	"

Flush.		CHAINS.		CLAWS, TACK.		DRILLS.	
WroughtNet		Breast Chains.		Wood hdl. No. 10...per doz. \$1 15		Bench.	
Spring.		With Slide...doz. pairs, \$5 50		Forged steel, wood hdl. " 2 15		Blacksmiths' Twist (New	
Wrought "		Without Slide... " 5 06		Solid steel " 3 25		List)40%	
Wrought, heavy..... "		Doubleslack " 9 35		Giant " 50		Breast.	
Square.		Picture Chains.		CLEAVERS.		Millers Falls No. 12, per	
Wrought "		Light brass, 3 ft., per doz. 1 25		Family.		doz.\$52 50	
BOXES.		Heavy brass, 3 ft. " 1 75		Beatty's, inch .. 7 8 9 10		Millers Falls No. 112, per	
Mail. No. 2 4 10		Sash Chain. (Morton's)		Per doz. \$27 00 29 00 33 00 36 00		doz.32 00	
Per doz. \$18 00 \$23 00 \$29 00		Steel, per 100 ft.		CLEAVISES.		Hand.	
Mitre.		0\$2 50		Malleable10c lb.		Goodell's Automatic.	
Stanley's.....Net Prices		23 10		CLIPPERS.		No. 01.....each \$1 60	
Stearns, No. 2...per doz. \$48 00		13 60		Bolt (Carolus).		No. 03....." 2 00	
BRACES, RATCHET.		Champion Metal.		No. 0.....\$2 50		Goodell-Pratt No. 4 1/4, each	
Goodell-Pratt No. 408.....\$4 60		0R5 40		No. 1.....3 25		Goodell-Pratt No. 379. " 4 00	
" " No. 410.....4 80		2R5 60		CLIPS.		Reciprocating.	
" " No. 412.....5 00		1R7 75		Axle65@5%		Goodell's3 20	
V. & B. No. 444 8 in.....4 65		Champion Metal.—Extra Heavy.		Damper.		DRIVERS, SCREW.	
V. & B. No. 333 8 in.....4 30		1H\$9 50		Standardper doz. 70c		StandardNets	
V. & B. No. 222 8 in.....4 00		Cable Sash Chains.		Troy38c		Lock Ferrule "	
V. & B. No. 111 8 in.....3 50		Steel.....List Net Plus 15%		Hame50c		Clark's Interchangeable.... "	
V. & B. No. 11 8 in.....3 05		CHALK, CARPENTERS'.		COLLARS, STOVE PIPE.		Goodell's Spiral..... "	
BURRS, RIVETING.		Blueper gro. \$2 00		Lacquered.		Yankee Ratchet "	
Copper Burrs only..30% above list		Red2 00		Inches5 6 7		" Spiral "	
Tinners' Iron Burrs only.....Net		White1 80		Fancy pattern, per doz.....65c 75c \$1 00		EAVES TROUGH.	
BUTTS.		Common White School		COMPASSES.		70-20% off Standard List.	
Steel, antique copper or dull		Crayon0 30		Carpenters'15%		ELBOWS—Conductor Pipe.	
brass finish—case lots—		CHIMNEY TOPS.		COPPERS—Soldering.		Galvanized Steel, Tin and Terne,	
3 1/2 x 3 1/2...per dozen pairs \$2 75		In bags.....per bag \$1 80		Pointed Roofing.		Plain Round or Round Corrugated,	
4x4....." 3 80		CHECKS, DOOR.		3 lb. and heavier...per lb. 40c		2 to 6 inch, Std. gauge...60-10-5%	
Heavy Bevel steel inside		CorbinNet list		2 lb.48c		2 to 6 inch, 26 gauge...40-10-5%	
sets, case lots—		RusswinNet list		1 1/2 lb.55c		2 to 6 inch, 24 gauge...15-10-5%	
.....per dozen sets 7 50		CHISELS.		1 lb.60c		Square Corrugated.	
Steel bit keyed front door		Cold.		CORD.		Standard gauge.....45-10-5%	
sets, each1 80		Good quality, 3/4 in., each \$0 44		White Wire.....60 & 5%		26 gauge.....30-10-5%	
Wrought brass bit keyed		V. & B. No. 15, 1/4 in.....0 23		Picture.		ELBOWS—Stove Pipe.	
front door sets, each... 3 25		V. & B. No. 15, 1/2 in.....0 48		Sash.		1-piece Corrugated, Uniform.	
Cylinder front door sets,		FIRMER BEVELLED.		Spot, No. 7.....per lb. 65c		Doz.	
each7 00		Berg's (Swedish).		No. 8.....60c		5-inch\$1 50	
CALIPERS.		1/2-inch.....per doz. \$ 4 45		COTTERS, SPRING.		6-inch1 60	
DoubleNet		1 - "7 15		All sizes.....\$7 1/2%		7-inch2 10	
Inside and Outside..... "		1 1/2 - "10 15		COUPLINGS, HOSE.		Uniform, Collar Adjustable.	
Wing "		2 - "17 15		Brass.....per doz. \$2 25		Doz.	
CANS.		2 1/2 - "26 95		CRADLES, GRAIN.		5-inch\$1 90	
Milk.		Round Nose.		Morgan's Grapevine, per doz. \$45 00		6-inch2 00	
Ohio.		V. & B. No. 65, 1/4 in.....0 33		CUT-OFFS.		7-inch2 50	
Gals.5 8 10		V. & B. No. 65, 1/2 in.....0 44		Standard gauge.....35%		ENAMEL.	
Each\$3 65 \$4 45 \$4 70		SOCKET FIRMER.		26 gauge.....20%		Per doz.	
Gem.		Berg's (Swedish).		CUTTERS.		Black Silk Air Drying.	
Gals.5 8 10		1/2-inch.....per doz. \$11 95		Glass.		No. 1, 1/2 pt. can with	
Each\$3 85 \$4 95 \$5 20		1 - "16 75		Red Devil.....Net		brush\$1 95	
Jersey or Holstein.		1 1/2 - "23 95		Meat.		No. 2, 1 pt. can with brush 3 50	
Gals.5 8 10		2 - "35 95		Enterprise—Nos. 5 10 12		Wire Screen Enamel.	
Each\$4 15 \$5 60 \$5 90		Cape.		Each\$2 50 \$4 25 \$3 75		Black Silk (Black only).	
CAN OPENERS.		V. & B. No. 50, 3/4 in.....0 29		Nos. 22 32		1/2 pt. friction top can....\$2 00	
See openers.		V. & B. No. 50, 1 in.....0 64		"\$6 50 \$8 50		1 pt. friction top can.....3 00	
CARRIERS.		CHUCKS, DRILL.		CRADLES, GRAIN.		1 qt. friction top can....5 40	
Hay.		Goodell's, for Goodell's Screw		Morgan's Grapevine, per doz. \$45 00		FACES, WOOD.	
Diamond, Regular...each, Nets		Drivers.....List less 35-40%		CUT-OFFS.		50% off list.	
Diamond, Sling....." "		Yankee, for Yankee Screw		Standard gauge.....35%		FASTENERS, STORM SASH.	
CARTRIDGES.		Drivers\$5 00		26 gauge.....20%		Shroeder'sper doz. \$1 50	
See Ammunition.		CHURNS.		CUTTERS.		Sensible3 00	
CASTERS.		Anti-Bent Wood.		Glass.		FENCING.	
Standard—Ball Bearing,		Gal.5 7 10		Red Devil.....Net		Lawn fence, single space,	
.....50 & 10%		Each\$3 00 4 60 4 85		Meat.		36-inch\$0 12	
Bed40%		Belle, Barrel.....65 & 7 1/2%		Enterprise—Nos. 5 10 12		Lawn fence, single space,	
Common Plate.		Common Dash,		Each\$2 50 \$4 25 \$3 75		42-inch10 26	
Brass Wheel15%		Gal.5 7		"\$6 50 \$8 50		Lawn fence, double space,	
Iron and porcelain wheels,		Per doz.\$17 00 19 00		Pipe.		36-inch12 54	
new list50%		CLAMPS.		Saunders, Nos. 1 2 3		Lawn fence, double space,	
Philadelphia Plate, new		Adjustable.		Each\$1 85 2 75 6 75		42-inch13 78	
list50%		Martin's30%		Slaw and Kraut.		Field fence, 26-inch, No. 10	
Martin's40%		No. 63, Screw.....20%		Per doz.		top and bottom 12 filling 26 50	
CATCHERS, GRASS.		Carpenters'.		4-knife Kraut.....\$20 00-55 00		Same, 6 filling.....33 88	
No. 160S.....per doz. \$12 25		Steel Bar...List price plus 20%		3-knife Kraut,		Field fence, 32-inch, No. 10	
No. 165S....." 14 01		Carriage Makers'.		8x27 in.13 00-18 00		top and bottom 12 filling 30 34	
CEMENT, FURNACE.		2 1/2-inch.....per doz. \$ 7 00		1-knife Slaw.....2 50		Same, 6 filling.....39 43	
American Seal, 5 lb. cans, net \$0 45		5 - "14 00		2-knife Slaw.....3 00		FILES AND RASPS.	
" " 10 lb. cans, " 90		8 - "28 00		DAMPERS, STOVE PIPE.		Heller's (American)60-5%	
" " 25 lb. cans, " 1 87		12 - "42 00		Diamond.		American60-5%	
Asbestos, 5 lb. cans.....45		Quilt Frame.		6-inch.....per doz. \$1 50		Arcade50-10%	
Pecora, 5 lb. cans.....45		No. 30, Ball and Socket,		DIGGERS.		Black Diamond.....50-5%	
" 10 lb. cans.....90		2 1/4-in. head..per gross \$13 00		Eureka.....per doz. \$14 50		Eagle50-10%	
" 25 lb. cans.....1 87		No. 50 Ball and Socket,		Iwan's Split Handle		Great Western.....50-10%	
CEMENT, FURNACE.		3 1/2-in. head..per gross 14 50		(Eureka)		Kearney & Foot.....50-10%	
American Seal, 5 lb. cans, net \$0 45		Hose.		4-ft. Handle...per doz. 15 00		McClellan50-10%	
" " 10 lb. cans, " 90		Sherman's, brass, 3/4-inch,		7-ft. Handle...per doz. 20 00		Nicholson50-10%	
" " 25 lb. cans, " 1 87		per doz.\$0 48		Iwan's Hercules pattern,		Simonds60%	
Asbestos, 5 lb. cans.....45		Double, brass, 3/4-inch, per		per doz.18 00		J. Barton Smith.....50-10-5%	
Pecora, 5 lb. cans.....45		doz.1 20		Dividers, Wing25%		X FNet List	
" 10 lb. cans.....90		Saw Filers.		FIRE POTS.		Clayton & Lamberts—	
" 25 lb. cans.....1 87		Wentworth's, No. 1, \$12.50; No. 2, \$18.25; No. 3, \$16.25.		each\$4 00@\$6 00		Gate City.....each 6 25	
				Gemeach \$6 75@ 8 50			

GALVANIZED WARE. Per doz. Pails (Competition), 8-qt. \$2 00 10-qt. " " 3 35 12-qt. " " 2 50 14-qt. " " 2 80 Wash tubs, No. 1. 6 50 No. 2. 7 50 No. 3. 8 50	HANDLES. Agricultural Tool. 4½-inch, plain. per doz. \$3 50 Auger. Common Assorted, per doz. \$0 75 Pratt's Adjustable, Nos. 1 & 2, per doz. 6 00 Ives' Adjustable. per set 1 35 Axe. Hickory, No. 1. per doz. 4 00 Hickory, No. 2. " 2 50 1st quality, second growth 6 00 Special white, 2nd growth. 5 00 Chisel. Hickory, Tanged, Firmer, Assorted. per doz. 55c Hickory, Socket Firmer, Assorted. per doz. 70c Coal Pick. 40% Drifting Pick. 40% File, assorted. per doz. 30c Hammer and Hatchet. No. 1, per doz. \$0 80 Second growth hickory, per doz. 1 40 Hay and Manure Fork, Han- dles, Strap and Ferrule. per doz. \$7 00 Screw Driver. Assorted. each 6c Shovel and Spade. Net	Screw Hook and Strap. 6 to 12 in. per 100 lbs. \$7 75 14 to 20 in. " 7 50 22 to 36 in. " 7 25 Screw Hook and Eye. ¼ in. per doz. pair \$2 00 ½ in. " 3 50 ¾ in. " 5 00 HOES. Garden. Net HOOKS. Awning, No. 60. Net Belt. Brown's. 70&5% Jones' 65&5% Box. No. 8 10 12 Each \$0 29 0 77 0 86 Bush. Common Axe Handle, per doz. \$20 00 Chain. Inch. ¼ 5/16 ¾ 7/16 ½ Pr. 100 \$7 60-8 10 9 75 11 50 12 60 Clothes Line. Japanned. per doz. 35c@1 00 Galvanized. " 65c@2 25 Conductor. Conductor hooks. 20-10% Corn. Common, riveted, red, per dz. Net Little Giant. " " Grass. Common Nos. 1 3 5 7 Per doz. \$4 25 3 25 3 40 3 50 Hammock. With plate. per doz. \$1 00 With screw. " 95 Picture. 50%&50%&10% Potato and Manure. Nets	KETTLES. Brass. 15% Cauldron. 40&5% Copper. per lb. 27 Maslin. 40&10% Sugar. 50% KNIVES. Beet Topping. Clyde, 9-in. Scimitar Blade, doz. 25% California. 25% Butcher. Beechwood Handles, 6-inch blade. 25% Beechwood Handles, 7-inch blade. 25% Beechwood Handles, 8-inch blade. 25% Cooper's Hoop. 25% Corn. Clipper. 25% Disston's No. 2. 25% Earle's. 25% Woodford. 25% Drawing. Standard. 25% Adjustable. 25% Barton's Carpenters'. 25% Hay. Iwan's Solid Socket. 25% Heath's. 25% Iwan's, Sickle Edge. 25% Iwan's Imp'd Serrated. 25% Hedge. Challenge. 25% Disston's No. 1. 25% Mincing. Common, Single. 25% Common, Double. 25% Streeter, 4-blade. 25% Streeter, 6-blade. 25% Putty. Common. 25% Landers. 25% Scraping. Beech Handle. 25% Lander's. 25% KNOBBS. Door. Mineral. per doz. \$1 90 Porcelain. 1 90 Jet. " 1 90
GARAGE DOOR HARDWARE. Stanley. All net GAUGES. Cream Pail. Fairmount. per doz. \$3 75 Marking, Mortise, etc. Nets Wire. Disston's. 25% GIMLETS. Discount. 65% and 10% GLASS. Single Strength, A and B, all sizes. 81% Double Strength, A and B, all sizes. 83% GLOVES. Per doz. 6-oz. knit wrist gloves. \$1 00 8-oz. knit wrist gloves. 1 20 10-oz. knit wrist gloves. 1 45 GLUE. Bulk. B Amber. per lb. 35c A white. 40c H. S. Amber. " 32c Liquid. Army & Navy. 40% Le Page's— List "A". 37½% List "B". 35% List "C". 25% GREASE, AXLE. Wood Boxes. Frazer's. per gro. \$13 00 Hub Lightning. 7 50 Wood Pails. Frazer's, 15 lb. \$1.00; 25 lb. \$1.50 each. Hub Lightning, 15 lb. 90c; 25 lb. \$1.21 each.	Garage Door. (See Garage Door Hdw.) Conductor Pipe. Iwan's Perfection. 50% Eaves Trough. Steel hangers. 30% Triple twist wire. 10% HASPS. Hinge, Wrought, with staples. Net HATCHETS. Per doz. Size No. 2 extra quality broad. \$19 00 Competitive Grade. 13 00 up No. 2 Warranted Shingling 14 25 Competitive Forged. 9 75 HAY RACK BRACKETS. Wenzleman's No. 1 per doz. sets \$18 00 Wenzleman's No. 2 per doz. sets 19 20 HINGES. Blind. Clark's Gravity No. 1. per set 45c No. 2. " 88c Gate. Clarks. 1 2 3 Hgs & Lch, ea. 85c 1 10 2 40 Hinges only— Upper. \$1 25 Lower. 1 55 Latches only— No. 1. each 28c No. 2. " 28c Screen Door. 1751—3x3. doz. \$2 00 1753—2½x2½. " 1 95 Spring. Chicago. Add 10% to list Gem. 25% Matchless. 40% New Idea. per gross \$6 90 Wrought Iron. Per 100 pairs with screws: Light Strap Hinges, No. 3 \$12 00 Heavy Strap Hinges, No. 4 15 75 Light T Hinges. No. 3 12 10 Heavy T Hinges. No. 4 20 00 Extra Heavy T Hinges. No. 4 21 50	IRONES. Sad. Charcoal. per doz. \$11.00 Common, polished, per 100 lbs. 7 75 No. 70 Asbestos. \$1 50 net No. 100. " 1 75 net Common, nickel plated. 8 25 Mrs. Pott's, No. 50 J, Enterprise, per set Nets No. 55 J. " " No. 50 T. " " No. 55 T. " " JACKS. Wagon. Richard's No. 1. per doz. \$15 50 Oliver. Nos. 0 00 Each \$0 60 \$0 80 Standard. Nos. 1 2 Each \$0 60 \$1 00 R-W Big Lift. 40% Tiger. 40%	LEATHER, LACE. Rawhide ¼-inch. 100 ft. \$2 60 " ½-inch. " 4 40 LEATHERS, PUMP. Valve and Plunger. 10% LEVELS. Disston, No. 28 Asst. \$22 05 " No. 18, 20 in. each 1 82 " No. 22, 24 in. each 2 40 " Shafting, 6 in. 19 30 " 6 in. gr. glass 5 75 " No. 1 Asst. 12 40 " No. 9 Asst. 24 20 " 24-26 in. each 1 03 " 28-30 in. each 1 09 LIFTERS. Stove Cover. Coppered. per gro. \$6 00 Alaska. " 4 75 Transom. Payson's. 55% LINES. Jute. per lb. 25c Sisal. " 35c Cotton. " 25c Braided Cotton. " 52c
HAFTS, AWL. Brad. Common. per doz. \$0 35 Peg. Patent, plain top. " 60 Patent, leather top. " 80 Sewing. Common. " 24 Patent. " 55 HAMMERS, HANDLED. Each, net Blacksmiths, Hand, No. 0. \$1 35 26 oz. " 1 35 Engineers', No. 1, 26 oz. 1 35 Farriers', No. 7, 7 oz. 1 41 Machinists', No. 1, 7 oz. 1 06 Nail. Vanadium, No. 4½, 16 oz., each. 1 56 V. & B., No. 11½, 16 oz., each. 1 13 Garden City, No. 11½, 16 oz., each. 94 Tinner's Riveting, No. 1, 8 oz., each. 80 Shoe, Steel, No. 1, 13 oz., each. 73 Tack. Magnetic. No. 5, each. 1 00 HAMMERS, HEAVY. Farriers'. 20% Masons'. Single and Double Face. 50%	GRINDSTONES. Inches. 7 8 10 12 Prices on application. Mounted. Ball Bearing. 1 2 3 Prices on application. GUNS. Iver Johnson Champion Single Barrel Shot Guns. Net Double Barrel, Hammerless. " HAFTS, AWL. Brad. Common. per doz. \$0 35 Peg. Patent, plain top. " 60 Patent, leather top. " 80 Sewing. Common. " 24 Patent. " 55 HAMMERS, HANDLED. Each, net Blacksmiths, Hand, No. 0. \$1 35 26 oz. " 1 35 Engineers', No. 1, 26 oz. 1 35 Farriers', No. 7, 7 oz. 1 41 Machinists', No. 1, 7 oz. 1 06 Nail. Vanadium, No. 4½, 16 oz., each. 1 56 V. & B., No. 11½, 16 oz., each. 1 13 Garden City, No. 11½, 16 oz., each. 94 Tinner's Riveting, No. 1, 8 oz., each. 80 Shoe, Steel, No. 1, 13 oz., each. 73 Tack. Magnetic. No. 5, each. 1 00 HAMMERS, HEAVY. Farriers'. 20% Masons'. Single and Double Face. 50%	IRONES. Sad. Charcoal. per doz. \$11.00 Common, polished, per 100 lbs. 7 75 No. 70 Asbestos. \$1 50 net No. 100. " 1 75 net Common, nickel plated. 8 25 Mrs. Pott's, No. 50 J, Enterprise, per set Nets No. 55 J. " " No. 50 T. " " No. 55 T. " " JACKS. Wagon. Richard's No. 1. per doz. \$15 50 Oliver. Nos. 0 00 Each \$0 60 \$0 80 Standard. Nos. 1 2 Each \$0 60 \$1 00 R-W Big Lift. 40% Tiger. 40%	LEATHER, LACE. Rawhide ¼-inch. 100 ft. \$2 60 " ½-inch. " 4 40 LEATHERS, PUMP. Valve and Plunger. 10% LEVELS. Disston, No. 28 Asst. \$22 05 " No. 18, 20 in. each 1 82 " No. 22, 24 in. each 2 40 " Shafting, 6 in. 19 30 " 6 in. gr. glass 5 75 " No. 1 Asst. 12 40 " No. 9 Asst. 24 20 " 24-26 in. each 1 03 " 28-30 in. each 1 09 LIFTERS. Stove Cover. Coppered. per gro. \$6 00 Alaska. " 4 75 Transom. Payson's. 55% LINES. Jute. per lb. 25c Sisal. " 35c Cotton. " 25c Braided Cotton. " 52c

PUTTY. Commercial Putty, 100-lb. kits \$4 75		SAWS. Butchers'. Atkins No. 2, 14-in. \$12 20 " No. 2, 18-in. 13 70 " No. 2, 22-in. 15 25 " No. 7, 16-in. 15 20 " No. 7, 20-in. 17 30 " No. 7, 24-in. 19 35 " No. 7, 28-in. 21 40 Disston's No. 2, 14-in. 18 20 " No. 2, 18-in. 19 50 " No. 2, 22-in. 20 85 " No. 7, 16-in. 20 00 " No. 7, 20-in. 21 35 " No. 7, 24-in. 23 35 " No. 7, 28-in. 26 00 Compass. Atkins No. 2, 10-in. \$4 95 " No. 10, 10-in. 5 10 " Blades, No. 2, 10 in. 2 95 " No. 2, 10-in. 3 00 Disston's No. 20 Jackson. 4 00 " No. 40 Sampson 2 50 " No. 2 & 77, 10-in. 6 05 " No. 9, 10-in. 6 80 Cross-Cut. Atkins No. 221, 4-ft. 2 70 " No. 221, 6-ft. 4 10 " No. 221, 8-ft. 5 45 Disston's No. 289, 4-ft. 3 15 " No. 289, 6-ft. 4 15 " No. 289, 8-ft. 10 65 Flooring. Atkins No. 96, 16-in. 19 95 " No. 96, 20-in. 21 85 Disston's D19, 16-in. 24 60 " D19, 20-in. 31 00 Hand and Rip. Atkins No. 54, 20-in. 17 75 " No. 54, 26-in. 22 10 " No. 53, 16-in. 16 45 " No. 53, 20-in. 20 80 " No. 53, 24-in. 24 20 " No. 53, 28-in. 28 60 " No. 7, 32-in. 31 95 " No. 8, 16-in. 17 55 " No. 8, 20-in. 20 75 " No. 8, 24-in. 24 40 " No. 8, 28-in. 29 50 " No. 8, 30-in. 32 95 Keyhole. Atkins No. 1, complete... 2 80 " No. 2, complete... 3 35 Disston's No. 5, complete 3 35 " No. 10, complete 3 70 " No. 95, complete 5 75 Miter Box. Atkins No. 1, 4x20. 29 70 " No. 1, 5x22. 34 55 " No. 1, 6x22. 38 35 Disston's No. 4, 4x20-in. 36 15 " No. 4, 5x22-in. 43 25 " No. 4, 6x22-in. 47 20 Pruning. Atkins No. 20, 12-in. 7 70 " No. 10, 16-in. 16 50 Disston's No. 20. 18 75 Wood. Atkins No. 202. 8 50 " No. 318. 10 05 " No. 906. 15 65 " No. 1509. 18 40 Disston's No. 111, 30-in. 22 20 " No. 111, 32-in. 22 75 " No. 47, 30-in. 20 25 " No. 47, 32-in. 20 80 SCISSORS. Star 60% SCOOPS. Hubbard Western Pattern Riveted. Size A B C D 1. \$16 75 16 00 15 25 14 45 4. 17 85 17 10 16 35 15 60 6. 18 65 17 85 17 10 16 35 SCRAPERS. Box. Triangular, No. 6 per doz. \$6 25 Road. Cubic ft. 7 5 3 With runners, ea. \$7 00 6 50 6 20 SCREEN DOOR HINGES. Cast iron gross \$13 00 Steel 9 50 SCREWS. Bench. Iron, ins. 1 1 1/2 1 1/2 " \$6 82 7 87 9 45 16 80 Wood, white maple, per doz. 6 00 Hand—Wood 50% Hand Rail 22% Jack 30% Lag or Coach—all sizes, gimlet pointed 45-50% Saw—Centennial. Nos. 1 2 3 4 Per doz. 47c 55c 75c 90c Wood. F. H. Bright 77 1/2-20% R. H. Blued 75-20% F. H. Jap'd 70-20% F. H. Brass 72 1/2-20% R. H. Brass 70-20% SCYTHES. Clipper, Grass. per doz. \$13 50 Honest Dutchman. 13 00		SETS. Nail. Square head. per doz. 1 84 Cup point, knurled " 1 78 Rivet. Farmers' per doz. 2 50 Tinniers' 3-4 5 75 " 00-0 8 75 Saw. Atkins No. 10. per doz. \$8 80 " No. 12. 6 20 Disston's Monarch No. 2 9 90 Disston's Monarch No. 12 13 20 Leach's 80 Nash's Hand 3 15 Nash's X-cut 4 20 Stillman's Lever. 1 30 Stillman's X-cut. 2 50 Whiting Pattern. 7 50 No. 21 Eccentric Anvil, Hand No. 395, N. P. Morrill Pat- tern 14 50 SHARPENERS, SKATE. Diamond per doz. \$1 60 Perfect 1 20 SHEARS Per Doz. Nickel Plated, Straight, 6" \$12 90 " " 7" 14 85 " " 8" 16 30 Japanned, Straight 6" 11 00 " " 7" 12 40 " " 8" 13 80 SHEAVES, SLIDING DOOR. Common. Inches 3 4 5 Per set \$1 40 1 75 2 40 Hatfield's. Per set \$1 80 2 10 2 75 25 SHELLERS, CORN. Union per doz. \$6 75 SHIELDS. Expansion Bolt Shields. 60% SHINGLES. Per Square Zinc (Illinois) \$15 00 SHOES. 60% SHOT—See Ammunition. SHOVELS AND SPADES. Hubbard's No. A B C D 1 \$16 00 15 10 14 45 13 70 2 16 35 15 60 14 85 14 10 3 16 75 16 00 15 25 14 45 4 17 10 16 35 15 60 14 85 Post Drains & Ditching. Hubbard's Size A B C 14" 17 15 16 40 15 65 16" 17 50 16 75 16 00 18" 17 85 17 10 16 85 20" 18 20 17 45 16 70 22" 18 55 17 80 17 05 Snow. Hubbard Special, Long Handle \$10 00 D-Handle 11 00 Sidewalk Scraper 6 50 Alaska Steel. D-Handle per doz. \$3 50 Long Handle 3 00 SINKS. Cast Iron. Painted, 16x24 Net Enameled, White, 16x24... Wrought Steel. Painted, 16x24 SKATES. Per pair Key Clamp Rocker, Men's and Boys'—best steel runners, bright finish. \$0 91 Same—nickel plated finish 1 18 Key Clamp Hockey, Men's and Boys'—polished cast steel runners 1 24 Children's Extension Bob. 55 Half-key Clamp Rocker— Women's and Girls' 1 15 Half-key Clamp Hockey— Women's and Girls' 1 51 Racers, aluminum finish, including shoes 9 00 Hockey, aluminum 9 00 Both same prices for men's and women's. Roller. Ball Bearing—Boys' 2 25 Ball Bearing—Girls' 2 45		SNAPS, HARNESS. Covered Spring Add 30% Judd's Pattern Add 33 1-6% to list SNATHS. Double Ring, Bush. per doz. \$9 75 Patent Loop, Bush. 10 00 Patent Loop, Grass. 8 75 SNIPS, TINNERS'. Clover Leaf 40&10% National 40&10% Star 50% SPRINGS, DOOR. Perfect. Nos. 2 3 4 5 6 7 Per doz. 55c 60c 65c 75c 90c 1 00 Reliance. Light Medium Heavy Per doz. \$1 55 2 10 3 20 Torrey's per doz. 1 65 SPRINKLERS, LAWN. Stearn's No. 1. per doz. \$11 50 SQUARES. Steel and Iron. Net (Add for bluing, \$3.00 per doz. net) Mitre Try Try and Bevel Try and Miter Fox's per doz. \$6 00 Winterbottom's 10% SQUEEZERS, LEMON. Common Wood. per doz. \$0 70 Porcelain Lined, Wood " 1 25 Boss, malleable iron " 1 20 Iron frame porc'n bowl 1 90 Iron frame, glass bowl 2 35 Little Giant, tin'd iron 4 00 Drum, japanned " 3 60 Drum, nickel plated " 4 50 STAPLES. Blind. Barbed per lb. 21 @ 22c Butter, Tub 16 @ 19c Fence— Polished per 100 lbs. \$5 45 Galvanized 6 15 Netting. Galvanized per 100 lbs. 6 50 Wrought. Wrought Staples, Hasps and Staples, Hasps, Hooks and Staples, and Hooks and Staples 50&10% Extra heavy 35% STEELYARD. Discount 25%. STONES. Axe. Hindustan per lb. New Nets More Grit Washita Emery. No. 126. per doz. New Nets Oil—Mounted. Arkansas Hard No. 7. per doz. New Nets Arkansas Soft Washita No. 717 Oil—Unmounted. Arkansas Hard per lb. New Nets Arkansas Soft. Lily White. Queer Creek. Washita Scythe. Black Diamond per gro. New Nets Crescent Green Mountain LaMolle Extra Quinne- bog Red End STOPS, BENCH. No. 10 Morrill pat- tern per doz. \$11 00 No. 11 Stearns pat- tern 10 00 No. 15 Smith pattern " 7 00 STOPPERS, FLUE. Common per doz. \$1 10 Gem, flat, No. 3. 1 00 Gem, No. 1. 1 10 STRAPS. Skate per doz. 85c&1 20
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STRETCHERS.

Carpet.	
Bullard'sper doz.	\$3 90
Excelsior	" 5 25
Malleable Iron.....	" 70
Perfection	" 6 30
King	" 4 50

Wire.

O. S. Elwood, No. 1 per doz. Nets	
O. S. Elwood, No. 2	"

SWIVELS.

Malleable Ironper lb.	\$0 10
Wrought Steelper gro.	4 50

TACKS.

Bill Posters' 6-oz., 25-lb. boxes.	
per lb.	15c
Upholsters' 6-oz., 25-lb.	
boxes, per lb.	15½c

TAPES, MEASURING.

Asses' Skin	List&40%
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THERMOMETERS.

Tin Case.....per doz.	80c&\$ 1 25
Wood Back....	" \$2 00& 12 00
Glass.....	" 12 00

TIES.

Bale.	
Single Loop, carload	
lots	75&7%
Single Loop, less than	
car lots	70&15%

TOOLS, SAW.

Disston's Universal.....	10%
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TRAPS.

Game with Chains.	Per doz.
Victor No. 1.....	\$2 01
Onelda Jump No. 1.....	2 75
Newhouse No. 1.....	5 62

Mouse and Rat.	List per gross.
Sure Catch Mouse Traps..	\$ 3 70
Vim Mouse Traps.....	3 70
Short Stop Mouse Traps..	3 20
Wood Choker Mouse	
Traps, 4 hole.....	17 00
Sure Catch Rat Traps....	16 00
Vim Rat Traps.....	16 00
Short Stop Rat Trap.....	15 00
Dead Easy Rat Traps....	17 00
Star Rat Traps.....	50 00
Erie	54 00
Packed in One Bushel Band Stave	
Baskets.	

List per bushel.	
Sure Catch Mouse Traps	
(360 Traps)	\$ 9 30
Short Stop Mouse Traps	
(360 Traps)	8 00
Sure Catch Rat Traps (54	
Traps)	6 00
Short Stop Rat Traps (54	
Traps)	5 60

Assorted Mouse and Rat Traps.	
List per bushel.	
Sure Catch (216 Mouse	
Traps and 26 Rat Traps) \$3	50
Short Stop (216 Mouse	
Traps and 26 Rat Traps) 7	50

TROWELS.

Cement.	
Atkins No. 6.....	19 50
" No. 9.....	25 50
Disston's	30%

TRUCKS.

Bag	each \$3 75
Warehouse or store,	
No. 1, each	\$24 50
No. 2, "	22 50

TUBS, WASH.

Standard, Wood.		Ex.
No.	3 2 1	large
Per doz. \$9 50	11 25	12 75 15 50

Galvanized.	
No.	1 2 3
Per doz.	13 75 15 95 18 60

TWINE.

White Cotton.	
Eureka, 4-ply.....per lb.	30c
Jute,	
3-ply and 6-ply Bale Lots.	22½c

VALLEY.

Formed Valley Galvanized	
Steel	60-5%

VICES.

No. 700, Hand.	
Inches	4½ 5 5½
Doz.	\$11 15 13 00 14 85
No. 701, In. 4 5 6	
Doz.	\$11 15 13 00 16 70
No. 1, Genuine Wentworth,	
Noiseless Saw.....per doz.	15 00
No. 2, Genuine Wentworth,	
Noiseless Saw.....per doz.	22 50
No. 3, Genuine Wentworth,	
Noiseless Saw.....per doz.	20 00
No. 500, All Steel Folding	
Saw	per doz. 16 00

WASHERS.

Standard O. G. cast iron, per	
lb.	3¾c
Wrought steel in 5-lb. boxes,	
per lb.:	
In. 3/16 ¼ 5/16 ¾ 1	
15c 14c 12c 11c 10c	
¾c ¾c ¾c 1 8c	

WEDGES.

Ax.	per doz. Nets
Galling	per lb. Nets
Saw	per lb. 8½

WEANERS.

Fuller's, per doz. \$2 00 to \$2 50	
Tyler's Safety, per	
doz.	1 85 to 2 40
Carroll's, per doz. 3 00 to 3 75	
Hoosier, per doz. 3 50 to 4 60	
Shaw Perfected.. 3 00 to 3 75	

WEIGHTS.

Hitching	per lb. Nets
Sash—f. o. b. Chicago.	
Ton lots, per ton.....	\$73 00
Smaller lots, per ton.....	75 00

WHEEL BARROWS.

Common Wood Tray.....	\$3 00
Steel Tray	4 50
Angle leg, garden.....	5 75

WHEELS.

Carborandum	50%
Emery	60%
Well, Ins.	8 10 12
Per doz.....	\$5 50 7 25 8 50
12-in. heavy holting,	
per doz.	\$25 00

WIRE.

Black Annealed No. 8, per	
100 lbs.	\$3 25
Galvanized barb wire, per 100	
lbs.	4 15
Wire cloth—black painted,	
12-mesh, per 100 sq. ft. ...	2 50
Cattle Wire—galvanized	
catch weight spool, per	
100 lbs.	4 15
Galvanized Hog wire, 80 rod	
spool, per spool.....	3 60
Galvanized plain wire, per	
100 lbs.	3 75

WOOD FACES.

50% off list.

WRENCHES.

Coes Steel Handle, 6-inch....	30%
" " " 8- "	30%
" " " 10- "	30%
" " " 12- "	30%
Coes Knife-Handle, 6- "	30%
" " " 8- "	30%
" " " 10- "	30%
" " " 12- "	30%
Coes All Patterns.....	30%
Bemis & Call's:	
Adjustable S, 10% Adjustable	
S Pipe, 10%; Briggs'	
pattern	30%
Combination Bright	25%
Steel Handle Nut.....	30%
Combination Black	25&5%
Merrick Pattern	30%

Knife Handle Pattern.

No. 62, Screw Wrench, List	
plus	30%
No. 60, Steel Handle.....	30%

WRINGERS.

No. 790, Guarantee, per doz.	\$60 00
No. 770, Bicycle ..	55 00
No. 670, Domestic ..	51 00
No. 110, Brighton ..	45 00
No. 750, Guarantee..	60 00
No. 740, Bicycle ..	55 00
No. 22, Pioneer ..	42 50
No. 2, Superb ..	30 00

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